University of Alberta

Intercultural Collaborative Inquiry on the Internet: Epistemological Humility in a Global Era

by

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Abstract

The purpose of this study was to examine the complexities and considerations engendered by intercultural education exchanges within collaborative online environments. The study presents four papers, each tailored to explore a dimension of this complex and inter-discursive area. This research study was interpretative and utilized a multi-method approach that subscribed to the assumptions of qualitative inquiry. The methods employed included web usage data mining, narrative inquiry, online social network analysis, and a focus group that unpacked preservice teachers' individual and collective understandings of global citizenship, global competency, digital literacy, and online intercultural exchange. Participants in the focus group included fifteen preservice social studies teachers in the Faculty of Education, University of Alberta; the majority of whom graduated in the spring of 2007. The analysis brought to this research study was a moderate hermeneutic attitude of inquiry, as suggested by Gadamer (1960), and assumes that the world around us can be interpreted.

Chapter 1 begins with a personal background to the research and explores an example of intercultural collaborative inquiry on the Internet. Chapter 2 provides an overview of the paper format, theoretical framework and research method. These two chapters set the overall context for the papers in the study.

Chapter 3 creates a foundational understanding of the inter-discursive nature of the research by reviewing the literature surrounding intercultural collaborative inquiry on the Internet. This literature review is bounded by the overlapping and interlaced discourses of global education, intercultural communication, computer-mediated communication, and intercultural communication on the Internet.

Chapter 4 examines the valued and culturally constructed origins of the Internet, and then affixes these origins to the current demographic trends related to global online user populations and dominant languages that are (re)shaping the dynamic cultural tempo of the Internet. This paper positions a distinct and timely educational concern for enacting intercultural collaborative inquiry on the Internet.

Chapter 5 essentially forwards a critique of the Internet as a medium generally lacking spontaneous intercultural collaborative activities. It explores the echo-chamber effect on the Internet (i.e., positive feedback loops), as an emerging phenomenon that can blind educators and students to the ever-emerging cultural, linguistic and dialogic diversity online, if they only create, experience and navigate online spaces that reinforce their 'preferred' world view.

Chapter 6 reconciles the findings from a focus group of beginning (preservice) social studies teachers at the University of Alberta, who reflect on the use of information and communication technologies (ICTs) as a means to explore complex relationships and responsibilities associated with the notion of global citizenship. Central to this paper are the views of these preservice teachers on the value of employing the Internet and web-based social networks as a means by which to engage in intercultural collaborative inquiry and enhance their own pedagogic practice, intercultural experiences, and understanding of (local and global) citizenship.

Chapter 7 weaves together the findings of this research study and asks five value-rational questions that suggest the next steps in improving educational practice through intercultural collaborative inquiry on the Internet.

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To complete this dissertation, and the associated academic journey, I have many people to thank for their support and unfaltering confidence in me. One of my greatest accomplishments, and gifts, in life is to be surrounded by a loving family, and many supportive friends with whom I can share the successful completion of this inquiry; you are all indeed my estate in life.

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CHAPTER 1
Introduction

"You must be the change you wish to see in the world."
~Mahatma Gandhi~

Prologue

On September 30, 2005, twelve cartoons of the Muslim Prophet Mohammed were published in a Danish newspaper. These images, and the many conversations surrounding them, quickly circulated via mass media outlets (print and online), and in doing so ignited a global intercultural conflict. As many European and North American newspapers (re)published the caricatures of Islam's prophet in the name of free speech, the conflict continued to deepen, and these same newspapers followed the ensuing local and global conflict:

- **叙利亚抗议者焚烧丹麦和挪威驻叙大使馆** (Henan Daily News, China)
  Syrians Burn Danish Embassy
- "احراق قنصلية الدنمارك في بيروت" (Gulf News, Bahrain)
  Consulate Burns in Beirut
- **U.S.: Tegner ikke den opgave** (Jyllands-Posten, Denmark)
  U.S.: Cartoons not the problem
- **Nigeria Cartoon Protests Kill 16** (British Broadcasting Corporation, United Kingdom)
- **Embaixador dinamarquês apresenta desculpas aos muçulmano** (Zambeze, Mozambique)
  Danish Ambassador Presents Excuses to Muslims
- **Afghan Clashes in Cartoon Protests Leave Four Dead** (Globe and Mail, Canada)

This struggle was fuelled by polarized cultural perspectives, and accounted for in the significant number of lives lost within the protests and resulting conflicts. Whether directly or indirectly, this situation affects our interests as human beings, for we cannot be indifferent to the long-term implications of cultural misunderstandings on a global scale. If, as educators, we are to be mindful contributors in societies that are increasingly defined by the trans-national flow of ideas, technology, people, capital and culture (i.e., globalization); then we are in a "pedagogical moment" (Van Manen, 1991) in our profession. It is a moment where we should ask the following question: Do our beginning teachers have the knowledge, digital literacy (Selber, 2004), and cross-cultural understanding to thoughtfully and effectively educate students for a global era?

In this dissertation, I submit that it is a responsibility of faculties of education to support the development of "intercultural communicative competencies" (Bennett & Bennett, 2004; Byram, 1997) for a global era. It is also essential that these same faculties advocate for a situational understanding of emerging online pedagogies associated with international web-based communicative and collaborative activities (McRae, 2006). By engaging in such endeavours, teacher education programs commit themselves to providing opportunities for faculty and student growth that broadens the epistemological orientations (and humility) of beginning teachers to support what Harvard University (2004) suggests is an endemic lack of undergraduate student "global competency" (p. 40). In the chapters that follow, I commit to research that investigates this very complex and inter-discursive domain within the field of education.

Background to the Research

My research interests are motivated by previous experiences teaching and living in the Middle East (United Arab Emirates), Asia (Japan), Europe (Spain), and on the Blood (Kainai) Reservation in Alberta, Canada. From these cross-cultural sojourns, I have become mindful of my own 'strangeness' within a spectrum of unique and diverse cultures. As Julia Kristeva (1991) suggests, "the foreigner lives within us: he is the hidden face of our identity, the space that wrecks our abode, the time in which understanding and affinity founder. By recognising him within ourselves, we are spared detesting him in himself" (p. 1). This international exposure has also led to more formal training through the Institute for Cultural Affairs (2006) in focus group methodologies for the promotion of social and organizational development.

My teaching experiences in Alberta classrooms have been instrumental to my understanding of learning and technology. I have supported student and faculty inquiry through numerous telecollaborative projects (Harris, 1998), instructed undergraduate education students via online courses at the University of Lethbridge, and lectured for graduate courses in educational technology leadership in the Master of Education in Educational Studies program at the University of Alberta. This understanding of information and communication technologies (ICT) in Alberta's K-12 classrooms was enhanced by my tenure as a provincial Manager of Learning and Technology with Alberta Education.

Over a three-year period, it was my responsibility to provide advice and counsel to senior Alberta Education staff on provincial learning and technology initiatives and policy development from a pedagogical perspective. In this position, I initiated several large-scale provincial research projects, including the Alberta Initiative for School Improvement (AISI) Technology Projects Research Review (Alberta Learning, 2004), Grade 9 Science e-Textbooks research and development project (Whitelaw et al., 2007), and the development of an Alberta K-12 learning and technology priority research agenda. A future component of my work would have been to focus on ICTs for Alberta classrooms in a global era by concentrating on the second goal of Alberta Learning's (2004), *Learning and Technology Policy Framework* which states: "The availability of the Internet and sophisticated multimedia tools is changing approaches to learning delivery – in the classroom, in distance learning, and in other learning contexts…It also facilitates the development of diverse, global learning communities and promotes information sharing and dialogue among learners and educators" (p. 4).

Within the confluence of these life experiences, I am compelled to conduct research that will provide opportunities to discuss a more proactive approach to the discourse around learning, technology and globalization, and in doing so, continue to personally grow as an educator.

Illustrative Example: Intercultural Collaborative Inquiry on the Internet

To provide an illustrative example from a posteriori knowledge, I offer the following anecdote related to my own understanding of intercultural collaborative inquiry on the Internet:

As an educator, a large part of my teaching experience has been working overseas in the Middle East, Asia and Europe. In 1996, I was living in the United Arab Emirates and teaching at Dubai Men's College. My faculty position was within the Electronic Engineering section of the college where I had primary responsibilities for the academic English preparation of the engineering students.

The mission of the Dubai Men's College is to ensure graduates have the "linguistic ability to function effectively in an international environment; the technical skills to operate in an increasingly complex technological world; and the intellectual capacity to adapt to constant change" (HCT, 2006). To create an international learning environment, Chancellor, H.H. Shaikh Nahyan purposefully recruits faculty from all over the world in an effort to immerse his nation's youth in multiple global perspectives throughout their college experience. On a daily basis, a student may encounter teachers from any one of twenty-five different countries represented on staff.

The dominant pedagogical approach within my multi-disciplinary faculty team was to support students in a project-based learning environment that placed a high degree of value on collaborative research, inquiry and differentiated instruction. Although the curriculum might be considered 'technical' in nature, the process by which students worked together to discover, apply their knowledge, and solve authentic problems would be identified by critical theorists as a constructivist-oriented pedagogy.

Haughey (2002) addresses the desirability of this pedagogical approach when she points out, "research in many parts of Canada has demonstrated the utility of a more active, problem-solving, inquiry approach. Using the technology to make visible knowledge-building, assumptions, queries and new propositions, makes it easier for students to consider the contributions of many and to be creative in their response" (p. 15). In support of an inquiry and project-based learning approach, my students would access the Internet to identify authentic text and primary source information from around the world and then communicate via email, chat, discussion boards or videoconferencing directly with key experts in their area of research. Students had already experienced intercultural communication with various faculty members, so reaching out on a more global scale was an acceptable socio-cultural activity within their learning experience.

Students actively and interactively collaborated in exploring ideas related to their projects. I noted that, as their essential questions were discussed and critiqued with 'others' online, many creative and exciting solutions were shared within our collaborative learning environment. A deep and broad understanding of the subjects brought together by this primary source intercultural research left a lasting impression on the students and my colleagues within the faculty. Of note was the students' engagement with a wide range of online synchronous and asynchronous modalities (i.e. from face to face videoconferencing to email exchanges), which empowered educational opportunities far beyond the support that any one faculty member alone could offer. When the students moved beyond their local experiential borders, via the Internet, they not only learned about divergent approaches to their work and discovered new meaning through critical reflection, they also came to acknowledge their own unique viewpoints in relation to others. I found this "perspective consciousness" (Pike & Selby, 2000) in my students to be an important consequence of this particular educational activity.

The advance of innovations such as email, chat, electronic bulletin board, instant messaging and visual communication mediums like desktop videoconferencing were just beginning to evolve in 1996, thus it was in a spirit of true exploration that my specific cohort of students connected interculturally via the embryonic Internet. By the year 2000, my final year at Dubai Men's College, I could sense that many students were entering my program with an increased connection to and familiarity with digital media and the 'online' environment. When provided the framework and pedagogical support, this new literacy within an emerging digital world opened up opportunities for the students to comfortably embrace opportunities to connect with others on a more global scale. Today, collaborative inquiry-based activities on the Internet, and the related praxis of e-learning, are rapidly becoming more present issues in educators' consciousness.

Upon my return to Canada, and through my professional work in the secondary education setting and at the provincial level, I became acutely aware of the systemic challenges students and teachers face when trying to engage pedagogically with technology and the curriculum. I noted that issues of cost, complexity, access and support were a daily occurrence within the realm of learning and technology. Schools were struggling with equitable access to a viable and robust technological infrastructure and support framework, while teachers grappled with the adoption of an inquiry-based approach to learning and technology in a setting defined by a lack of sustainable and job-embedded ICT professional development opportunities. It also seemed apparent to me that students were not independently or organically seeking perspectives different from their own while interacting in cyberspace. Young people (and adults for that matter) were instead relegating themselves to hermetically sealed online spaces that resonated only with their own belief systems and ideological orientations.

My concept of education for a global era has been repeatedly shaped by these lived experiences in a socio-constructivist approach (Vygotsky, 1978) to teaching and learning, whereby students learn about themselves, and different worldviews, directly from and within a more global (online) context. Philip Phenix (1971) supports such an educational approach when he posits: "The transcendence-oriented educator helps his students to be alert to the realities of intellectual mutations, revolutions, and inventions, and endeavors to create an atmosphere and an expectation in which his students may share in the construction of new and more illuminating patterns of thought". Perhaps by providing preservice education students with opportunities to collaborate and critically engage on the Internet, while unearthing individual (and collective) perspectives within the consciousness of a global discourse, then we would indeed be embracing a transcendent approach to 21st century educational practice.

How shall I talk of the sea to the frog,
If it has never left his pond?
How shall I talk of the frost to the bird of the summerland,
If it has never left the land of its birth?
How shall I talk of life with the sage,
If he is prisoner of his doctrine?
~ Chung Tsu, 4th Century B.C.

Rationale:

With increasing global interdependence, and the proliferation of web-based communication technologies, it is now more common for students and teachers to connect with other cultures on an international scale. Whether by phone, email, online discussion boards, blogs, wikis, podcasting, instant messaging, web-based videoconferencing or even air travel, our ability to reach around the world, and in turn be 'reached', is profoundly transforming our sense of local, national and global identity. Existing research has explored the implications of face-to-face intercultural collaboration and the positive results (i.e., appreciation of diversity) of these exchanges (Hammer, Bennett, & Wiseman, 2003; Germaine, 1998); however, a question remains as to whether these promising outcomes can be extended or enhanced for preservice teachers via digital communication and collaboration.

The literature is especially lacking as it pertains to online collaborations between teachers from different cultures (Davis & Cho, 2005; Ferdig & Dawson, 2005a; O'Dowd, 2003; Merryfield, 2003) and how these cultures are expressed and shared on the Internet where the implicit value systems (e.g., immediacy, transparency and openness) may impact the cross-cultural exchange (Macfadyen, Roche & Doff, 2004). The reason for a dearth of research into the nature of intercultural collaborative inquiry on the Internet is due in part to the fact that it draws from such diverse academic domains.

Context:

If teacher education programs are to continue supporting meaningful and relevant teaching and learning, clearly the pedagogical practices must speak directly to the 'Internet' generation. Statistics Canada suggests that an overwhelming majority (86%) of Canadian schools are now using broadband (i.e., high speed) technologies to access the Internet (Ertl & Plante, 2004, p.14). Additionally, new research released by the Media Awareness Network of Canada (2005) - *Young Canadians in a Wired World Phase II* study - indicates that Internet access for children (Grades 4 to 11) in the home environment is close to ubiquitous: "94 percent of kids report that they have Internet access at home, and a significant majority of them (61 percent) enjoy a high-speed connection" (p. 6). Locally, the *SuperNet* has connected every publicly funded Alberta school, library, hospital, and government facility, with a broadband network that enables high-speed Internet access to 4,000 buildings in over 429 urban and rural communities across the province (Alberta Education, 2005). While globally, the Internet is growing to encompass over 1.2 billion users (Internet World Statistics, 2007) which in turn is causing a drift away from a primarily North American population in cyberspace, to one populated by citizens of other global regions who can material afford the access.

With this level of connectedness embedded in students' lives, educators at all levels are increasingly pursuing the pedagogical potentials of the Internet and will soon be exploring possibilities for online student engagement with other cultures. This educational desire is a natural extension of globalization; a contemporary transnational flow of ideas, people, culture and technology.

In recognition of this emerging digitization of society, and to affirm the knowledge and skills that will be meaningful for participation in the 21st century, Alberta's Kindergarten to Grade 12 education system has implemented several new and revised curricular initiatives: new *Information and Communication Technology (ICT) program of studies*, revised *Social Studies curriculum*, and a new *International Languages programs* (Alberta Education, 2006). Concurrent with these curricular changes, a generation of young adults familiar with cyberspace are entering the education profession, and they represent a new teaching demographic that has been shaped by a digital literacy.

This 'digital literacy' denotes an increased proficiency in 'reading' (*navigating and exploring)* and 'writing' (*creating and constructing)* within online environments.

Clifford, Friesen, and Lock's (2004) research speaks to the high level of digital literacy of preservice teachers in Alberta's three largest universities, "students are arriving in faculties of education with increasing fluency and confidence with technology in their personal and professional lives" (p. 103). However, they also state that "it cannot be assumed that pre-service teachers automatically know how to create the kinds of learning environments for children and youth that they, themselves, have seldom if ever experienced" (p. 104). Although we can assume a certain functional digital literacy (Selber, 2004) and comfort with information and communication technologies in our undergraduate student population, we cannot take for granted that this fluency will translate into the ability to teach effectively for a global era if a sound pedagogical and conceptual framework has not been explored.

Significance:

Beginning teachers are more likely to employ pedagogies that foster a global awareness and appreciation for diversity in their own teaching and learning contexts if equipped with positive experiences in intercultural communication, and with a hopeful disposition towards the theory and skills to creatively use digital technologies to enhance student learning. Thus, I seek to explore the many complexities associated with intercultural collaborative inquiry on the Internet and base it on the use of emerging information and communication technologies. This research also intends to support practicing (inservice) teachers by providing a progressive discussion around intercultural collaborations online in secondary social studies contexts. In addition, findings from this study will be relevant to schools and institutions interested in promoting effective international exchanges for students, teachers or faculty, with the findings considered in relation to 'online activities' for pre-departure or re-entry of international participants.

There are many challenges to intercultural collaboration within a technology-mediated context, including the linguistic barriers between global participants, cultural hegemony in an online environment, equitable and reliable access to technology, scheduling synchronous communications across time zones, mediation of culture and employing relatively new socio-constructivist pedagogies that link learning and technology. This research contributes to a deeper understanding of these many complexities, and encourages a more proactive approach to the discourse around technology and globalization.

As our schools and our social and personal environments become increasingly permeated by the Internet and its requisite technologies, the significance of this medium to educational practice rapidly evolves. It is imperative that educators are mindful of "the discourses and practices generated around/by technology and the new forms of social reality created by technology" (Escobar, 1994, p. 214), and thoughtfully committed to an awareness of the always emerging practices of cyberculture, orientations different cultures have in shaping new technologies, and the ever-present political economy within cyberspace. In recognizing the many challenges and opportunities for intercultural education exchanges on the Internet, one might then begin to work towards a realization of the pedagogical potential of this medium within preservice teacher education programs.

CHAPTER 2
Research Method

The Paper Format

This doctoral dissertation takes the form of a collection of scholarly papers, each of which addressed a specific dimension of the research topic. Each paper aligns with the overarching area of investigation and is framed within distinct areas of exploration. Because each paper represents a distinct component of the research topic, each also subscribes to a particular research method (e.g., narrative inquiry, focus group methods). The research method, as described in each paper, provides an overview of the accompanying approach, as well as a description of the thematic structures framing the discourse. This approach is decidedly pragmatic and is described by Patton (1990) as:

> a paradigm of choices [that] rejects methodological orthodoxy in favor of methodological appropriateness as the primary criterion for judging methodological quality . . . a paradigm of choices recognizes that different methods are appropriate for different situations . . . [and] situational responsiveness means designing a study that is appropriate for a specific inquiry situation (p. 39).

A more "standard" dissertation format was adapted in favour of a publishable scholarly article format so that the papers would be readily accessible to individuals exploring this emerging trans-phenomenal and inter-discursive research area. In their entirety, the papers and an extensive literature review cover the usual domain as any dissertation: introduction, description, theoretical framework, literature review, methodology, findings, ethics and concluding perspectives. The papers were each written with specific audiences in mind and focused on the following fields: learning and technology, teacher education, intercultural communications, and contemporary issues in technology and teacher education. The paper topics were selected using two criteria: they had to 1) address a lacuna of research on the topic and 2) inform other scholarly work in the field of education.

The Research Questions

The goal of my doctoral research was to explore the many complexities and considerations engendered by opportunities for preservice teachers to engage in purposeful intercultural exchanges within collaborative online environments. To engage in this inter-discursive and trans-phenomenal study, each paper addresses unique questions applicable to the study undertaken. These research questions are contextualized within each paper immediately following the article's introduction, theoretical context, and rationale.

Theoretical Frameworks:

My research activities generally adhered to a theoretical framework that was constructivist in nature and that grappled with essentialist paradigms towards innovations in learning and technology. This study was situated in a theory of *social constructivism* (*socio-constructivism*), which recognizes that social processes are instrumental to the building of intra and interpersonal knowledge (Davis, 2004; Vygotsky, 1978). *Perspective consciousness* was employed to acknowledge the uniqueness of individual viewpoints, along with an awareness that these viewpoints are constantly being shaped by subtle influences which may not be universally shared (Pike & Selby, 2000; Hanvey, 1982). Perspective consciousness is the awareness that individuals have different points of view, and if efforts are made to see the world through 'other' eyes then the unconscious assumptions underlying our unique viewpoints may be questioned and the legitimacy of perspectives different from our own recognized. As Hanvey (1982) declares, "this recognition of the existence, the malleability, and the diversity of the perspective, we might call perspective consciousness" (p. 162).

The study drew upon theories of *intercultural communication* (Bennett & Bennett, 2004; Ess, 2002; Byram, 1997), which suggest that, as an individual's experience of cultural difference becomes more sophisticated, so does his or her overall competency in intercultural situations. I also relied on *complexity theory* (Davis & Sumara, 2006) as a relatively recent theory in its applications to the field of education, and one that recognizes educational practice as a complex adaptive space defined by heterogeneity, non-linear dynamics, self-organization and emergent behaviour. Complexity theorists point to complex systems as trans-phenomenal entities that include the World Wide Web, living cells, ecosystems, languages, and cities all existing as "vital simultaneities" (Davis & Sumara, 2006, p. 159) across diverse social, cultural and biological systems. As a theoretical framework, complexity theory opened possibilities for the exploration of the complex social attributes of human and non-human entities and the effect of power relationships on intercultural exchanges enacted on the Internet in order to "find a way of talking about the social-and-the-technical all in one breath" (Law, 1991, p. 8). Together, these four theoretical approaches created a harmonious framework upon which to conduct this research and represent but one assemblage of the many possible choices.

Data Collection: Focus Group Method

The use of 'group interviews' (see Hargreaves, 1967), as a means of unearthing processes and practices within educational contexts, is not a new qualitative research approach. However, this approach has evolved into an increasingly popular 'focus group' technique and is becoming a well-established social science methodology (Parker & Tritter, 2006). Contemporary examples of recent educational 'focus group' techniques, which emerge out of the group interview tradition, are increasingly common in the literature (see Taylor et al., 2006; Allen, 2005; Eastlick, 2003).

Data Analysis: Hermeneutic Attitude of Inquiry

The attitude of analysis brought to the data was that of hermeneutic inquiry, as suggested by Gadamer (1960), and assumes that we can indeed interpret the world around us. The Internet, its historical origins and the socially constructed nature of interactions within this medium are to be understood as a (social) text upon which I reflected and drew out new understanding. To speak about understanding in a hermeneutic sense implies that I attempted to discover the structure and dynamics of intersubjectivity (Davis, 2004) as enacted on the Internet; a space where cultures are constantly mediated and (re)created through the social construction of knowledge. Given that my study situated notions of intercultural collaborative inquiry as an interpretive frame, moderate hermeneutics (Gallagher, 1992) was a useful method to explore the ontological nature of the Internet and the pedagogical potential of an online intercultural dialogue (as per the illustrative example in Chapter 1). As Smith (1991) suggests, hermeneutics is aware of the "storied nature of human experience...we find ourselves, hermeneutically speaking, always in the middle of stories, and good research shows an ability to read those stories from inside out and outside in" (p. 201).

Reflecting upon the dynamic nature on the Internet also aligns with a hermeneutic attitude of "bringing forth and a bringing to language of something new. We work out this newness by working it into a world of relationships that can sustain it. In these relationships, others start to recognize not only something of themselves, but also of the world; they recognize something old and something new" (Moules, 2002, p. 5). As a method for analyzing data, the hermeneutic approach was intended to generate insight into this research area in a meaningful and powerful manner, while coherently and pragmatically presenting the pedagogical implications of intercultural education exchanges on the Internet for faculties of education committed to broadening the epistemologies of beginning teachers.

CHAPTER 3
Literature Review

Introduction

The literature review for this dissertation is exploratory in nature and lends itself to a qualitative approach. A critical first stage of my research in this interdisciplinary and evolving field of study was to survey the research literature in four primary areas: *global education, intercultural communication, computer-mediated communication* and *intercultural communication on the Internet*. These four thematic areas were identified as having the greatest potential to inform my particular line of research, and also illustrate the inter-discursive and trans-phenomenal nature of the study. The descriptive findings that follow provide insight into the wide range of opinions held by researchers and study participants, not a population at large and rarely did the literature reveal specific information pertaining to online collaborations within a beginning teacher population. Given the limitations noted above, and the nature of this evolving field of study, an ongoing survey of current research and theory in this literature review references many diverse disciplines (cultural studies, intercultural studies, linguistics, sociology, education, human-computer interaction, complexity studies, online learning, and others). I have attempted to present an overview of the primary debates, major researchers in the field, highlights of some of the theoretical approaches, and the emerging areas of research. I also identified some of the unresolved questions and, where possible, highlighted gaps in the knowledge and understanding related to intercultural communication in an online environment.

Research Method

This review was undertaken as a broad synthesis of relevant research and literature in key areas. Although the research themes are listed as discrete headings, due to the interconnected nature of the topics, many of the findings are applicable across the four different areas. The findings from the research literature, except where noted otherwise, are for adult learners. This literature survey was primarily carried out using the University of Alberta Library Catalogue. The databases searched are linked to the Neos Library Consortium and included:

- Taylor and Francis Group
- EBSCO Host
- Blackwell-Synergy Publishing

In addition, the following journals were surveyed for recent or seminal research:

- Journal of Computer-Mediated Communication
- Journal of Language, Learning and Technology
- Journal of Curriculum Studies
- Journal of Curriculum Theorizing
- International Journal of Intercultural Relations
- Journal of Technology and Teacher Education
- Contemporary Issues in Technology and Teacher Education
- Australian Journal of Educational Technology
- Journal of Technology in Education

Additional scholarly suggestions were put forward by key researchers in these fields, as well as by my colleagues at the University of Alberta. In addition, research was unearthed while searching the Internet using the Google Scholar and Book forums, encountered in bibliographies of seminal articles, and located in the proceedings of recent academic conferences coordinated by AERA (American Educational Research Association), CSSE (Canadian Society for they Study of Education), SITE (Society for Information Technology and Teacher Education) and CATaC (Cultural Attitudes Towards Technology and Communication).

Global Education:

The term "global education" has entered the educational lexicon only recently and brings with it multiple, and sometimes contradictory, interpretations. The literature attends to many different terms associated with global education, including: multicultural education, intercultural education, education for social justice, global citizenship, anti-racist education, international education, inclusive education, world studies, development education, and global dimensions (Hicks, 2003). Although these terms have common characteristics, they can also have very different meanings. As Tye (2003) suggests, in the United States, global education has recently taken on many ethnocentric characteristics, whereby a conservative education agenda encourages schools to "teach about other peoples and countries, but do it 'patriotically'" (p. 165).

Other criticism of global education come from Bushell and Dyer (1996) who recognize that global education challenges students' values: "Global education is transformative, not conservative; students are often challenged to examine and perhaps change their assumptions and values. This transformative view of education is especially problematic in cross-cultural contexts where foreign teachers are trying to respect the cultural values of the students and not impose alien ones" (p. 15). Becker (1978) alternatively suggests that global education should be considered 'basic education' and that "our survival and well-being is intimately related to our capacity to understand and deal responsibly and effectively with other peoples and nations and with a host of international issues" (p. 229).

Some scholars have attempted to identify the core elements necessary for an initiative to make the claim that it is in fact attuned to global educational practices. Robert Hanvey (1982) presents such an approach with his five essential goals for 'an attainable global perspective': *perspective consciousness, state-of-the-planet awareness, cross-cultural awareness, knowledge of global dynamics,* and *awareness of human choices.*

Pike and Selby (1988) augmented Hanvey's (1982) framework by proposing five goals which would constitute the 'irreducible global perspective' and establish a comprehensive framework for addressing a school's commitment to global education.

Irreducible Global Perspective (Pike & Selby, 1988)	
Perspective Consciousness	The awareness that we each have a view of the world that is not universally shared and that the perspective of others has its own legitimacy.
Health of Planet Awareness	An informed understanding of the concepts of justice, human rights and responsibilities in the health of society and of the planet. From the perspective of *biocentrism*, humans are one species within the planetary system and not in dominance over the planet.
Systems Consciousness	The ability to think in a systems mode with a holistic view of the interdependent nature of change and cause and effect.
Involvement Consciousness	The awareness of the ramifications of personal and collective choices.
Process-Mindedness	The awareness that learning is a cooperative, open-ended journey.

More recently Pike & Selby (2000) have (re)defined global education as that practice and thinking that brings together two inter-related strands: *world mindedness* and *child-centeredness*. This conception of global education presents many similarities to Alberta Education's new K-12 social studies program, which promotes notions of (global) citizenship (i.e., *world mindedness*) and identity (i.e., *child-centeredness*) as its underlying principles.

Perspective consciousness, as noted in this dissertation's theoretical framework, is a concept distinctly tied to contemporary thinking in global education and most useful for considerations of intercultural collaborative inquiry on the Internet. Hanvey (1982) first defined perspective consciousness as:

> The recognition or awareness on the part of the individual that he or she has a view of the world that is not universally shared, that this view of the world has been and continues to be shaped by influences that often escape conscious detection, and that others have a view of the world that are profoundly different from our own (Hanvey, 1982, p. 162).

Notions of perspective consciousness within a global education framework can also be situated within a discourse on postcolonialism. Postcolonial thinking entails looking at the world, and an individual's experience, as both colonized and colonizer (a double identity as described by Kristeva, 1991). This means critically examining the relationships and worldviews of both the 'western' and 'non-western' throughout the intercultural online exchanges.

Merryfield & Subedi (1997) advocate for infusing a social studies curriculum with notions of perspective consciousness and a postcolonial approach to 'decolonizing the mind': "Once students are able to recognize the limitations of colonialist assumptions in a postcolonial world, they can begin to see the world from other perspectives and learn from people whose voices they may never have had the opportunity to hear" (p. 285). Indeed, Alberta Education's newly revised social studies curriculum points to opportunities for students to learn from multiple viewpoints and different perspectives, especially those of First Nations, Metis and Inuit (FNMI) people.

Mezirow's (2003) work on the transformative dimensions of adult learning also informs an understanding of perspective consciousness through a 'transformative learning theory':

> Transformative learning is learning that transforms problematic frames of reference - sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets) - to make them more inclusive, discriminating, open, reflective, and emotionally able to change. Such frames of reference are better than others because they are more likely to generate beliefs and opinions that will prove more true or justified to guide action (Mezirow, 2000, 1991).

Many authors have suggested that global and intercultural education is currently afforded a minimum of attention in teacher education programs (Leeman & Ledoux, 2003; Sleeter, 2001; Homan, 1999), these authors advocate for the preparation of practicing and preservice teachers' global competencies as integral to professional development and teacher preparation program, as opposed to an afterthought. Leeman and Ledoux (2003) write: "intercultural education is not only a political issue; it is also a matter of the curriculum characteristics of institutes for teacher education....The way in which intercultural education is presented to students appears to be superficial and lacking a critical perspective" (p. 279).

Causey, Thomas and Armento (2000) point to the prior knowledge and belief systems preservice teachers bring to their studies. Leeman and Ledoux (2003) concur and suggest that in many teacher education programs, “most students come from a monocultural background and lack insight into the causes and manifestations of social and ethnic–cultural diversity and inequality” (p. 281). According to Causey, Thomas and Armento (2000), when American students start their teacher education they have a simple picture of the world that is characterized by an optimistic individualism which ascribes to beliefs of ‘absolute democracy’ and ‘naive egalitarianism’.

The importance of global education to faculties of education across North America is underscored by Harvard University’s 2004 curriculum review for undergraduate programs. The first of five themes in this work suggests: "First, today’s world requires a greater emphasis on internationalization…we must aim to prepare students to live as citizens of a global society. Our students of the twenty-first century go out into a world made smaller by technology, but still defined by different and changing cultures and civilizations. They may well find themselves living and working in another part of the world, and surely must expect to work with colleagues who bring with them differing cultural assumptions…This is a moral responsibility, in the same way that educating students as citizens of a free society was in 1945" (Harvard University, 2004, p. 8).

Intercultural Communication:

While endeavouring towards the creation of a theoretical and conceptual framework of intercultural education exchanges on the Internet, it seems only reasonable that an accounting be made of the growing corpus of empirical and theoretical research on 'face-to-face' intercultural communications. This field can be divided into two major bodies of research and schools of activity: *theory and research* and *theory and practice* schools. These are each defined by distinct journals, professional bodies, conferences and scholarship. The researchers and practitioners in this field are dedicated to exploring means by which people can come to understand and communicate with one another in the face of disparate experiences, values, norms, language, symbols or artifacts.

One of the most prominent figures from the theory and research arena is Milton Bennett (1993) and his work on the *Developmental Model of Intercultural Sensitivity (DMIS)*. This seminal research provides a theory-based explanation for the varying degrees of individual and organizational effectiveness one can observe in cross-cultural exchange. For instance, to operate effectively in a culture different from one's own, an interest in the culture and its practices must first be imagined; followed by a realization that there are in fact extant cultural differences between individuals; and finally, given an increased cultural 'sensitivity', one's behaviour is adjusted to demonstrate respect for the people, traditions, symbols and practices of the 'Other'. This ability to distinguish and experience relevant cultural differences is defined by many scholars as an intercultural sensitivity. As Bennett suggests, "By recognizing the underlying cognitive orientation toward cultural difference, predictions about behavior and attitudes can be made and education can be tailored to facilitate development into the next stage" (Hammer & Bennett, 1998).

Stages of the Developmental Model of Intercultural Sensitivity (Bennett, 1993)			
Ethnocentric Stages	***Denial***	One's own culture is experienced as the only real one. Other cultures are avoided by maintaining psychological and/or physical isolation from differences.	People at *Denial* are disinterested in cultural difference…may act aggressively to eliminate a difference if it impinges on them.
	Defense	One's own culture is experienced as the only good one. The world is organized into "us and them," where "we" are superior and "they" are inferior.	People at *Defense* are threatened by cultural difference, so they tend to be highly critical of other cultures.
	Minimization	One's own cultural worldview is experienced as universal. Because these absolutes obscure deep cultural differences, other cultures may be trivialized or romanticized.	People at *Minimization* expect similarities, and they may become insistent about correcting others' behavior to match their expectations.
Ethnorelative Stages	***Acceptance***	One's culture is experienced as just one of a number of equally complex worldviews. Acceptance does not mean agreement - cultural difference may be judged negatively - but the judgment is not ethnocentric.	People at *Acceptance* are curious about and respectful toward cultural difference.
	Adaptation	The state in which the experience of another culture yields perception and behavior appropriate to that culture. One's worldview is expanded to include constructs from other worldviews.	People at *Adaptation* are able to look at the world "through different eyes" and may intentionally change their behavior to communicate more effectively in another culture.
	Integration	One's experience of self is expanded to include the movement in and out of different cultural worldviews.	This stage is not necessarily better than *Adaptation* in most situations demanding intercultural competence, but it is common among non-dominant minority groups, expatriates, and "global nomads."

After developing the DMIS theoretical framework, Bennett collaborated with Mitch Hammer to develop the *Intercultural Development Inventory* (Hammer & Bennett, 1998) which evaluates an individual's discrete level of 'intercultural competence'. The inventory is composed of a battery of questions that locates an individual(s) within the five stages of the developmental model of intercultural sensitivity (as described above). In various intercultural situations (assessing training needs, guiding interventions for individual and group development of intercultural competence, and program evaluation), the Intercultural Development Inventory (IDI) has been utilized to measure the implications of face-to-face intercultural collaboration and the results (i.e., appreciation of diversity) of these exchanges (Hammer, Bennett, & Wiseman, 2003). The importance of developing intercultural competency in faculties of education is clear, because it is still not automatically part of teacher education programs (Leeman & Ledoux, 2003), and because many beginning teachers have not been exposed to positive cross-cultural exchanges, and they often lack a familiarity with other cultural groups. In a global era, this inattention to intercultural competency can lead to a stereotyping (implicitly or explicitly) within the beginning teacher's classroom setting. A unique and valuable contribution to the growing corpus of intercultural communications research would be to examine the applications and effectiveness of the IDI when applied to individuals (e.g., beginning teachers) engaging in cross-cultural exchanges on the Internet.

The work of Gordon Allport (1954) and his 'intergroup contact theory' also presents some guiding and empirically tested principles for intercultural exchange. This theory suggests that the positive effects of intergroup contact will occur only in exchanges where the following four key conditions are present: "equal group status within the situation; common goals; intergroup cooperation; and the support of authorities, law, or custom" (Allport, 1954, p. 537). Equal group status 'within the situation' is an important perspective for all participants entering into an online exchange and should be agreed upon by all sides before and throughout the activity (Cohen & Lotan, 1995). By having the online participants establish common goal(s) for the exchange, a very necessary 'shared object' of interest will begin to emerge for the virtual community. In considering this common goal, it should be underscored by a feeling of intergroup 'cooperation' that distinctly avoids situations of competition among groups and focuses on a collective achievement or progression towards a common goal. Finally, in terms of support for authority Pettigrew (1998) posits: "With explicit social sanction, intergroup contact is more readily accepted and has more positive effects. Authority support establishes norms of acceptance" (p. 67). This is a logical conclusion and evident in the multicultural nature of the military, religious institutions, and the global business community, each having their own authorities, laws or customs that establish norms of acceptance. Achieving a sense of authority within an intergroup exchange, while avoiding a decidedly authoritarian or hegemonic position, is a unique challenge to all teaching and learning situations as well as intercultural communication.

As outlined, Allport's hypothesis is most useful to my studies, in that it highlights many proven conditions of contact if an 'exchange' is to be found promoting positive intergroup attitudes and activities. However, this theoretical structure does not address a discussion of the essential 'processes' necessary for an intercultural communicative activity. For this, I turn to Byram's (1997) model of *intercultural communicative competence* which outlines a learning 'process' for effective intercultural exchanges: .

Intercultural Communicative Competency (Byram, 1997, p 50-63)	
Attitudes of Curiosity & Openness	"a readiness to suspend disbelief about other cultures and belief about one's own" (p. 50).
Knowledge of Social Groups	"a knowledge of social groups and their products and practices in one's own and in one's interlocutor's country and of the general process of societal and individual interaction" (p. 58).
Skills of Interpreting & Relating	"an ability to interpret a document or event from another culture to explain it and relate it to documents from one's own" (p. 61).
Skills of Discovery & Interaction	"an ability to acquire new knowledge of a culture and cultural practices and the ability to operate knowledge attitudes and skills under the constraints of real-time communication and interaction" (p. 61).
Critical Cultural Awareness/ Political Education	"an ability to evaluate critically and on the basis of explicit criteria perspectives practices and products in one's own and other cultures and countries" (p. 63).

Byram's model takes into account the principles or key characteristics of intercultural communication, while comprehensively outlining an approach that deals with the skills, attitudes, knowledge and critical awareness which have been seen to constitute intercultural competence. Byram's research also offers modes of assessment for each part of the model for intercultural communicative competency. This model, and that of the Intercultural Development Inventory (Hammer & Bennett, 1998), opens up possibilities for beginning and practicing teachers to become action researchers as they investigate the impact of online intercultural communication within their own teaching and learning contexts.

Computer-Mediated Communication

Computer-mediated communication (CMC) is an emerging area of scholarly research and is a key component in the consideration of intercultural communications or collaborations within online environments. CMC may be defined as "communication between different parties separated in space and/or time, mediated by interconnected computers" (Romiszowski & Mason, 1996). On the Internet this method of communication began to emerge in the late 1980's and early 1990's as primarily text-based message systems (e.g., UseNet) that required a particular specialized knowledge for its effective use (Herring, 2004). As the Internet has evolved to a much wider global audience, so has CMC in the form of email, discussion boards, mailing lists (listservs) and chat forums. The current popularity of CMC is growing rapidly within a digitally literate generation that embraces the relatively cheap, fast and freely accessible nature of these communication technologies on the Internet. Some of the contemporary open or 'free' CMC technologies taking shape in (and out) of cyberspace include:

- **Voice over Internet Communication** (e.g., Skype, Google Talk, Podcasting)
- **Web-based Videoconferencing** (e.g., Macromedia Breeze, MSN Netmeeting)
- **Instant Messaging Services** (e.g., MSN Messenger, ICQ, Yahoo Messenger)
- **Short Messaging Systems** - SMS (a.k.a, Cell phone Text Messaging)
- **Web Logging** (e.g., Blogger)
- **Socially Open & Collaborative Online Writing Spaces** - Wiki (e.g., Wikipedia)

These CMC technologies are rapidly converging to offer multiple services bundled into one space (e.g., instant messaging, text messaging, file sharing and voice/video over Internet), all within a spectrum of portability through mobile devices.

CMC is described in some of the literature as reinforcing a reduced social dimension (Coverdale-Jones, 1998) where identifying characteristics such as ethnicity, social class, gender and oral abilities are masked within the predominantly text-based environment of email, discussion boards and chat forums. Warschauer (1997) suggests that students, who do not actively engage in face-to-face discussions while in the context of a classroom, are more likely to communicate while in an online environment. His research provides examples of this non-verbal activity supported by CMC within a population of Japanese school children who are under cultural obligations to act passively while in a classroom setting, but not so within an online context. Simons (1998) points to the particular benefit of this communicative freedom within an online intercultural environment when he posits:

> Skin colours and other biases based on visual factors will be minimised. Individuals who by ethnicity or personality are less outspoken in face-to-face situations may contribute more abundantly to news groups and forums that provide off-line time to prepare a response, or where they enjoy anonymity or less exposure (Simmons, 1998, p. 14).

It should be noted that if an online intercultural communicative activity relies on disguising or masking the cultural identity of a participant, then a critical and open dialogue which explores issues of ethnicity, bias, social class, gender and discrimination will be lost to the exchange and replaced by a deceptive frame of reference.

In the literature, some authors question the ways CMC is giving rise to new social and communicative practices (Ess, 1996). David Kolb, cleverly reflects on email as 'new' social practice: "a written letter unanswered for a month is not so serious, but an e-mail message unanswered for the same time can signal the ending of a relationship" (Kolb in Ess, 1996, p.16). As many of us can attest, CMC promotes briefer, more conversational and indeed bulleted communication patterns within our electronically mediated dialogue. Sherry Turkle, a prominent scholar in this area, writes extensively on the socio-psychological implications (Turkle, 1997, 1995) of human and computer interactions. In her 2004 work on CMC and global access to information technologies she suggests, "we shape our technologies and our technologies shape our habits of mind….what this generation of schoolchildren, K-12, shares globally is mediated locally, but exposure to the evocative power of digital technology – the way it acts on cognition and affect – is one of the generation's defining traits" (Turkle, 2004, p. 97). The balance of the literature reviewed suggests that CMC is indeed changing 'habits of mind' and giving rise to new social practices.

Within an educational context, CMC is predominately used in online courses or distance education contexts as an asynchronous learning approach. More recent blended learning environments are emerging within educational settings, where students (K-12 and post-secondary), are using CMC to extend and facilitate discussions that originate in the face-to-face classroom (An & Frick, 2006). Distinctly absent from contemporary CMC research are the implications of synchronous and digitally converged CMC technologies, such as mobile text/instant messaging and portable videoconferencing, to achieve more formalized learning objectives.

Ray Kurzweil (2005) moves considerations of CMC to some dramatic conclusions with his treatise on the *law of accelerating returns* and his commentary on the profound changes computers will soon have on communication and human societies at large. His hypothesis suggests that technologies, which include those currently used for CMC, are evolving at an exponential rate. By the middle of this century, he suggests "the growth rates of our technology…will be so steep as to appear essentially vertical. From a strictly mathematical perspective, the growth rates will still be finite but so extreme that the changes they bring about will appear to rupture the fabric of human history" (p. 9). This view of the future is worth noting in the field of CMC, as Kurzweil, who holds twelve honorary doctorates and honors from three U.S. presidents, is the principal inventor of many innovations that will continue to shape the future of 'intercultural' CMC (e.g., first voice-to-text speech synthesizer on computers and the first large-vocabulary speech recognition – see Kurzweil Technologies, 2006).

Intercultural Communication on the Internet:

The balance of the most contemporary literature on intercultural communications on the Internet is highly polarized into perspectives that are either clearly utopian or dystopian. Rarely was it possible to locate articles that would break away from this Cartesian duality, and in doing so explore a third space where the nature of the network and interplay of cultures online is considered (at once) both a challenge and a uniquely hopeful space for web-based intercultural collaborative inquiry. The scholars who do address this more balanced third space, and recognize the paradoxes of the Internet, envision the medium as: universalizing and non-totalizing (Poster, 2000), collaborative and fragmenting (Levy 2001), and oppressive yet empowering (Brown & Davis, 2004).

Researchers, who have adopted concepts of the Internet as a distinctly utopian space, suggest that it will bring about new forms of democratic action, emancipatory global conditions, and collective intelligence (Kelly, 2005; Levy, 2001; Ess, 1998). As Levy (2001) posits, the Internet encompasses "modern ideals, firmly situated in the revolutionary and republican ideals of liberty, equality and fraternity" (p. 230). Ess (1998), imagines the Internet as "both motivator and means towards greater human excellence, perhaps on new scales and levels" (p. 20). Brown & Davis (2004) argue that new media and the Internet "offer tantalizing potential to increase access to education, and to intercultural experiences, more generally, that should enhance and broaden education for all" (p. 234). A critique of the utopian perspectives is that it ignores the encultured nature of the Internet as a medium inextricably linked to both cultural constructs and linguistic realities (McRae, 2006; Chase et al., 2002; Escobar, 1994).

At the other end of the spectrum, researchers who offer uniquely dystopian perspectives regarding intercultural exchange on the Internet, demonize the capitalistic nature of the medium and its attempt to extend the 'privileges' of the west, and its democratic perspective, around the world (Castells, 2001; Sardar, 1996; Escobar, 1994). This dominance of western culture and value systems online raises the specter of Internet Imperialism. Hedley (1999) and Rushkoff (1996) argue this point when they suggest that the Internet has created possibilities for cultural imperialism on a massive scale and could result in the rapid movement of ideas that will destabilize other 'non-western' societies. Specifically, Izumi Aizu (1995) suggests that Japanese traditions will suffer from the intrusion of the western values dominating the Web. Of relevance to Aizu's concern is a study of Japanese-American online collaborations where the Japanese students, "face power inequity as they deal with someone else's dominant perspectives" (Hamada & Scott, 2000).

This dystopian perspective fails to address the dynamic and constantly changing nature of the medium. Nor does it take into account the postmodern position which contends that the Internet does not have an embedded commercial culture, but instead is a venue where entirely 'new' cultures emerge. As Poster (2000) suggests, the Internet evokes a "second order of culture, one apart from the synchronous exchange of symbols and sounds between people in territorial space". Another proponent of this formation of new cultures is Castells (2001) who sees (cyber)culture emerging as representative of the existing culture of scientific and technological excellence "enlisted on a mission of world domination" (p. 60).

This contentious issue in the literature around the interpretation and definition of culture as either created or reified on the Internet (Macfadyen, Roche, & Doff, 2004) is an area that will require further consideration. Of interest to my area of investigation is research that points to an understanding of cultural exchange as distinctly *thick* (Geertz, 1973) and/or *thin* (Walzer, 1994). As Walzer (1994) suggests a *thick* cultural interaction is, "a way of talking among ourselves, here at home, about the thickness of our own history and culture…richly referential, culturally resonant, locked into locally established symbolic system or network of meanings" (p. xi). While a *thin* exchange is "a way of talking to people abroad, across different cultures, about the thinner life we have in common" (Walzer, 1994, p. xi). Hongladarom (2001) believes that exchanges on the global Internet are generally 'thin' by nature and thus not able to make a claim of superiority over a local 'thick' culture. It is suggested, however, that individuals are able to manoeuvre within (and between) a thick local culture and a thin global culture, and in doing so, find a space that preserves both the local identity while amplifying the global connections.

Hongladarom (2001) suggests this possibility while referring to the work of Walzer (1994, p. 1–19):

> Moral arguments are "thin" when they are shorn of their particular histories and other cultural embodiments which make them integral parts of a cultural entity. These are the parts that make the arguments "thick". To use Walzer's own example, when Americans watched Czechs carry placards bearing words like "Truth" and "Justice", they could relate immediately to the situation and sympathized with the marchers. However, when the arguments are at the local level, as to which version of distributive justice should be in place, there might well be disagreements, and Americans may find themselves disagreeing with the particular conception of justice which is eventually adopted. The sympathetic feeling one feels across the Ocean is part of the "thin" morality, but the localized and contextualized working of those moral concepts is part of the "thick" (Hongladarom, 2001, p. 318).

The thick and thin reading of a cultural exchange presents a cogent way for educators and/or researchers (not that these are always distinctly different entities) to access the cultural and subcultural interactions continually imagined and created within an online intercultural collaborative inquiry.

The field of Language Learning in particular has published widely regarding intercultural communication and the integration of language education in an 'authentic' context. In fact it has been involved in studies around the use of computer networks and telecollaborative learning for 'authentic' language instruction for many years and is therefore the most mature domain in terms of research. In this field, the degree to which one is able to communicate interculturally, depends primarily on the individual's ability to understanding the perspective of 'Other' through the shared language and an openness to meaningful activities that allow for negotiation of meaning. Kramsch (1993, p. 183), points to intercultural learning through three explicit goals of foreign language learning and teaching: 1) communicate appropriately with native speakers of the language 2) get to understand others 3) get to understand themselves in the process.

Many research studies in the language learning field have explored the use of email as a mechanism for language students to exchange electronically via the target and native language (O'Dowd, 2003; Belz, 2002; Müller-Hartmann, 2000). Examinations of email exchanges dominate the literature relating to online intercultural communication on the Internet (O'Dowd, 2003; Grotenhuis, 2000; Inglis, 1998). In fact, the majority of the studies reviewed were found to be investigating online intercultural communications through the lens of discrete (and often asynchronous) information and communication technologies, as opposed to a range of situationally appropriate CMC approaches. The use of email exchange for language study is rooted in the practices of direct intercultural exchange (Freinet, 1974) and is part of the "perennial concerns within communicative language teaching for authenticity of learning tasks and materials, variety of discourse options, the significance of learners' epistemic roles in the classroom…, and the role of the classroom in fostering language awareness…and learner autonomy…" (Kinginger, 2004, p. 101).

The early research in online language learning tended to focus on the linguistic characteristics of CMC in single classrooms and with individual technologies, but this is beginning to change. The current research on language learning and technology is maturing with a much broader interpretation of linguistic telecollaboration:

> More recently, this second wave of online language learning has been deepened by a shift in focus from single classrooms to long-distance collaboration projects. This shift accomplishes three things. First, it expands the focus beyond language learning to an emphasis on culture (i.e., intercultural competence, cultural learning, cultural literacy). Second, it expands the notion of context beyond the local (often institutional) setting to include broad social discourses. Third, it problematizes the notions of its own inquiry, namely, communication and intercultural competence (Kern, Ware, & Warschauer, 2004, p. 244).

The online language learning environments that are currently used to facilitate this 'collaboration at a distance' are extremely complex systems that should not be entered into with a naïve or simplistic view of the learning process. A virtual exchange for the purpose of language learning is especially complicated by a lack of visual linguistic cues, accompanying cultural expectations, and differing learner needs (i.e., audio, visual, tactile). Wilson et al. (1998) and Arnold (1998) provide some useful suggestions regarding the design of web-based courses that can counteract cultural imbalance between the learners' needs and the designer's expectations.

A few scholars in the field of teacher education are just beginning to seriously examine the potential of the Internet as a medium of intercultural communications (Ferdig & Dawson, 2005b; Davis, 2005; Merryfield, 2003). A common theme in these case studies is to frame notions of learning within 'communities of practice' (Lave & Wenger, 1991). The means by which these communities of practice (or professional learning communities) are created and sustained in an online environment is not fully explored in any of the research reviewed, but it is a contemporary issue of interest to educational practice and research in Alberta's K-12 learning system (McRae & Gregor, 2005).

Cummins & Sayers (1995) suggest that contemporary thinking around intercultural collaborative inquiry on the Internet, as previously noted, has its origins in the work of Freinet (1974) and his 'global learning networks' of the 1920's. This pioneering educator established inter-school networks in Europe which enabled students to exchange *cultural packages* containing artifacts such as flowers, fossils, records, tape recordings and photographs of the local context, with classes from other regions.

Although his educational practice took place long before the advent of a global computer network such as the Internet, his learning networks did take advantage of the technologies and modes of communication that were readily available to his students in the early parts of the 20th century (e.g., telephone, radio, and tape recording devices). Freinet's obligation towards the technologies of his era was not so much due to their efficacy, as it was to encourage young people to take control of the mass media he feared would alienate them from their world, or propagate a "psychic disequilibrium" (Cummins & Sayers, 1990, p. 16) between students and their social and physical environments. This fear is still evident today in curriculum and educational settings that pay homage to 'media awareness' and 'digital literacy' (see Media Awareness Network, 2005).

Freinet was particularly interested in the connection between community-based learning and educational activities concerned with local actions aligned around social justice. He therefore endeavoured to have his students' 'eyes opened' to both the local and global contexts when the cultural artifacts were exchanged over great distances. The partnerships between faraway classes served as the "precursor to a more profound and active engagement with social realities much closer to home. It was this practice of having students distance themselves from their local circumstances that Freinet (1974) suggested would stimulate social action in the local context.

Thus one of the many valuable aspects of the early global networks Freinet established was to situate notions of 'distancing' as integral to the exchange:

> Interscholastic exchanges contribute in the broadest sense to learning which is rooted in life, provoking a kind of healthy reawakening. When we live very close to our surroundings and to people, we eventually come not to see them. We experience a kind of symbiosis, a phenomenon of erosion which deadens our ability to be surprised. But thanks to the questions which emanate from afar, our eyes are opened; we question, we investigate, we explore more deeply in order to respond with precise verifications to the inexhaustible curiosity of our distant collaborators, based on a natural motivation. This gradually leads to an awareness of our entire geographic, historic, and human environment" (Gervilliers et al., 1977, p 29-30).

This focus on pedagogies that distance students from their local circumstances is also reminiscent of Paulo Freire's (1996) work with adult literacy in Brazil. Freire explored the power of 'distancing' through his *culture circles* which incorporated audiovisual technologies in the form of slides or photographs of peasant community life for the purpose of adult literacy education and a pedagogy of freedom (Freire, 1996). Brown et al. (1998) describe the work of Freire's culture circles as the: "simple act of creating graphic depictions that are at once one step removed from the lives of the peasants yet still grounded in their everyday realities, a process of distancing was initiated that would lead to shared critical reflection and decisive, active engagement to transform those realities" (p. 347). The visual slides utilized in these culture circles presented a way of democratizing culture by making images "shareable" among participants, just as the Internet today is lauded as a democratizing force which openly 'shares' information among global participants. Both Freire and Freinet's experience with the emerging technologies of their era, and their use of a 'pedagogy of reflective distancing', may be similarly implicated in the educational exchanges of preservice teachers on the most contemporary of global learning networks; the 'World Wide' Web.

Marshall McLuhan's (1964) research also presents some of the early theoretical considerations on the impact of electronic mass media to global (and intercultural) communication. In the introduction to McLuhan's (1964) *Understanding Media* he writes: 'Today, after more than a century of electric technology, we have extended our central nervous system in a global embrace, abolishing both space and time as far as our planet is concerned' (p.3). McLuhan went on to popularize the term, 'Global Village', with his emphasis on electronic media's unique ability to have people instantly experience the effects of local actions on a more global scale via an electronic generated 'nervous system'. Mcluhan (1964) makes the suggestion that media connected societies are forced into a sort of electronic contraction, whereby "the globe is no more than a village. Electric speed at bringing all social and political functions together in a sudden implosion has heightened human awareness of responsibility to an intense degree" (p.5). Although Mcluhan's (1989) research presents some unique considerations for the connected nature of many 21st century societies, it has be criticized for making an assumption that the entire population of the 'village' has equitable access to electronic technologies, or that these individuals have the interest and intercultural communicative competence to actively participate in the electronic discourse.

Conclusions

The unanticipated consequence of the Internet as a space for empowering intercultural collaborative inquiry is still an unfolding phenomenon to which this doctoral research will contribute new understandings. However, this review of current and seminal research, which intersects with the domains of *global education, intercultural communication, computer-mediated communication and intercultural communication on the Internet*, presents useful considerations for engaging in this emerging and inter-discursive research area. The research in the area of intercultural communication on the Internet is especially mindful of the ability of technology (within a more interconnected world) to transcend the many traditional challenges of geography and time.

While helpful for setting general directions in my research, the specific details provided in the literature were often tied to the language learning or (face-to-face) intercultural studies domain. In some cases emerging research was situated within faculties of education; however, in these circumstances the findings were primarily focused on a small number of graduate students in doctoral or masters programs. It is therefore evident that research is needed to develop useful theories of online intercultural collaborative inquiry in preservice education programs, and in doing so, articulate a collaborative ontology for beginning teachers in a global era.

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CHAPTER 4

Technological Instrumentalism, Educational Praxis and the Dominant Culture(s) on the Internet

"The culture of the original Internet was one of trust"
~ Leonard Kleinrock (One of the Founding Inventors of the Internet)

Introduction

For many Canadians, the Internet is akin to electricity flowing through our buildings: *It just is*! In fact, according the Media Awareness Network (2005), Internet access for Canadian children in grades 4 to 11 is near ubiquity: "94 percent of kids report that they have Internet access at home, and a significant majority of them (61 percent) enjoy a high-speed connection" (Media Awareness Network, 2005, p. 6). Globally, the Internet has penetrated into 17% of the world's population, with ambitious efforts moving to make computing and affordable Internet access available to 50% of the people on the planet by the year 2015 (Advanced Micro Devices, 2007). Currently, the online user population is expanding at a rate of 16% per annum, with the overall average online population standing at 1.2 billion users in 2007 (Internet World Statistics, 2007a; Advanced Micro Devices, 2007); a far cry from the 16 million people online just over a decade ago (see Appendix E).

With this level of connectedness embedded in students' lives all over the world, educators are increasingly pursuing the pedagogical potentials of the Internet and are embracing organizations such as the International Education and Resource Network (www.iearn.org) that support intercultural collaborations online. This educational desire is a natural extension of the global flow of ideas, people, cultures and technologies (i.e., globalization). In order to consider engaging students online with other cultures, educators must be attuned to the complexities and dynamics of the Internet as a technical space for the mediation of cultural exchange. An understanding of the diversity of cultures participating in the formation of social networks on the Internet is also important.

The intent of this paper is to first put forward a challenge to widely held assumptions that the Internet is a medium that is technologically instrumental (i.e., culturally and morally neutral), by exploring the embedded values and culture(s) nested within the topology of the global network. Indeed, a prevailing idea among many educators (and students) is that the online world is a medium that is value free, culturally neutral, and gender-blind (Ess, 2002). As Marshall McLuhan (1964) argues, media is deterministic in that it can exercise 'lines of force' that shape our experiences with them:

> any medium has the power of imposing its own assumptions on the unwary. Prediction and control consist in avoiding this subliminal state of Narcissus trance. But the greatest aid to this end is simply in knowing that the spell can occur immediately upon contact, as in the first bars of a melody (p. 15).

The second intent of this paper is to explore the dynamic changes in the global Internet user populations through a synthesis of historical data. The changes illustrated by the demographic fluidity of ethnic cultures shaping the social sphere of cyberspace are dramatic and point to diverse possibilities for online intercultural collaborative exchange. The implications of these findings to educational practice on the Internet will be discussed throughout the article, along with considerations for future research. Because the Internet is still in the early stages of its evolution, a discourse on the complexities of the medium is essential to realizing its potential as an enhancement to educational praxis and intercultural collaborative inquiry.

Theoretical Context

In this study, complexity theory (Davis & Sumara, 2006; Newman et al., 2006, Davis, 2004; Barabási, 2002, & Davis, 2002) is employed as a theoretical framework. Sage (2003) defines complex networks as "phenomena that may be characterized by the interactions of numerous individual agents or elements, which self-organize at a higher systems level, and this organization results in evolutionary, emergent, and adaptive properties that are not exhibited by the individual agents themselves" (p. 3). By their very nature, complex systems are difficult to define given that their complexity is to be incompressible. Axelrod and Cohen (2000) simply point to it "when a system contains agents or populations that seek to adapt, we will use the term Complex Adaptive System" (p. 7). While Waldrop (1994) defines a complex system as "a dynamic network of many agents (which may represent cells, species, individuals, firms, nations) acting in parallel, constantly acting and reacting to what the other agents are doing" (p. 5).

Complexity theory has a long history outside the field of education, and is garnering interest with researchers exploring the Internet and educational practice (Davis, 2002). Complexity theory assists in reading the self-organizing nature of the Internet as a complex adaptive system. Network theory (Latour, 2005; Watts, 2004; Barabási, 2002; Watts & Strogatz, 1998), a subset of complexity science, recognizes the significance of multiple 'agents' (e.g., organizations, humans, computers, objects and the environment) as contributors within a heterogeneous (social) network on the Internet. As a theoretical framework, network theory opens possibilities for the exploration of the complex social attributes of human and non-human entities, and the implications of power relationships on intercultural exchanges enacted on the Internet, in order to, "find a way of talking about the social-and-the-technical all in one breath" (Law, 1991, p. 8).

Rationale for the Study

While not openly advocating technological instrumentalism (an assumption that technology is 'culturally neutral'), a number of researchers have put forward rather utopian visions of the Internet (Kelly, 2005; Levy, 2001). These utopian visions have resulted in a particular blind spot to the dominant values and underlying cultural constructs inherent in the design of this global network. The reality is more complex, and therefore to engage in a discourse on the participatory pedagogy around intercultural collaborative inquiry on the Internet, a critique of the medium of engagement will be offered.

There also exists a dearth of research on the fluidity and emergent nature of the global user population on the Internet, especially as mapped over time. As this medium rapidly evolves, some data collection has been put forward by research firms (i.e., Nielsen//Net Ratings) around the nature of the (market) populations online, but this research is focused primarily on specific historical moments, and is not necessarily concerned with the fluidity of a global digital divide, nor its implications to education. A study documenting the global Internet population's emergence over the past decade, coupled with a discourse on the implications of this demographic shift to educational practices in a global era, is new to the literature.

Research Questions

Two primary questions guide the research in this study:

1) What are the implicit values and cultures inherent in the technical design of the Internet?
2) How are online user populations and dominant languages shifting on the Internet?

The implications of the findings to these questions are discussed throughout the article in light of considerations for intercultural collaborative inquiry on the Internet.

Research Method

The Internet has opened up new possibilities for scholars in the field of education to research and gather data on a wide range of social activities and human behaviours related to education. This study expands on these possibilities by combining a qualitative-quantitative approach to Internet research. To explore the values and cultures that shape the topology of the Internet, a hermeneutic attitude of inquiry is brought to the investigation. When researching the emergent nature of online user populations, a more quantitative approach is employed that draws on web usage data mining (Woon et al., 2004) as the research method.

The Internet, defined as a network of interconnected computer networks, contains a vast amount of data that is generated from countless interconnected websites, and socially-open webspaces (e.g., wikis, blogs). An important characteristic of the Internet, in addition to large volumes of data, is its ephemeral characteristics, where content, populations, and structures change dramatically over time. This can be seen in the findings from a proliferation of research activities into online communities of practice, web communities and peer-to-peer networks (Sooryamoorthy & Shrum, 2007; Thelwall, 2006). In much of this research, data mining methods have been used to identify patterns in usage of the network(s) through exploitations of both content (e.g., online dialogue) and through the exploitation of hyperlink and network structures within the communities. Hermeneutics has also been essential to Internet research as a medium of educational exchange, as patterns of behaviour nested within these communities are interpreted.

Hermeneutic Inquiry

The attitude of analysis brought to exploring the values and cultures embedded in the Internet is a moderate hermeneutic inquiry as suggested by Gallagher (1992) and assumes that we can indeed creatively interpret the (virtual) world around us, even though these interpretations are imperfect, ambiguous and essentially constrained by the 'text' itself. The Internet, its historical origins and the socially-constructed nature of interactions within this medium are to be understood as a (social) text upon which reflection is enacted and new understandings are drawn out. To speak about understanding in a hermeneutic sense implies that attempts are made to discover the structure and dynamics of intersubjectivity (Davis, 2004) on the Internet; a space where cultures are constantly being mediated and (re)created through the social construction of knowledge. Hermeneutics is a useful research method to explore the ontological nature of the Internet and the pedagogical potential of online intercultural dialogue by looking at the work through an interpretive frame. As Smith (1991) suggests, hermeneutics is aware of the "storied nature of human experience...we find ourselves, hermeneutically speaking, always in the middle of stories, and good research shows an ability to read those stories from inside out and outside in" (p. 201). As a method, hermeneutics is intended to generate insight into this research area in a meaningful and powerful manner, while coherently and pragmatically discussing the pedagogical implications.

Web Usage Data Mining

The technical infrastructure of the *Internet* can be understood as a global network of interconnected networks that is dynamically growing at an unprecedented rate, while the *World Wide Web* refers to a collection of interconnected and hyperlinked documents on the Internet. The method employed in this study to access the research around the changing online user populations is that of 'Web Mining' (Thelwall, 2005). Web Mining is broadly defined by Galeas (2007) as "the extraction of interesting and potentially useful patterns and implicit information from artifacts or activity related to the World Wide Web". The knowledge discovery domain that profiles user populations on the Internet is a subset of this research activity, and is known as Web Usage Data Mining (Heer & Chi, 2002) and defined by Woon et al. (2004) as "the extraction of meaningful user patterns from Web server access logs using data mining techniques" (p. 374). This research approach is fast gaining importance due to the proliferation of data located on the Internet and its readily accessible nature to researchers (and other interested parties).

To 'web mine' the user population data on the Internet, and to present a historical record of the global demographic trends over time, five years of quantitative research was collected and aggregated into an assemblage of multi-year statistical information. The information on global Internet user populations were mined from duly sourced data published by Internet World Statistics (2007a). The data were, in turn, compiled from information out of Nielsen//NetRatings (2007), the International Telecommunications Union (2007), and the Computer Industry Almanac (2007). Historical data on global Internet populations for 2002 was pulled from the Internet Archives (2007) where 85 billion web pages have been cached since 1996. The online user statistics in this publication were corroborated with research from the Pew Internet and American Life Project (2007) and the Central Intelligence Agency's World Factbook (2007). The data mined for this study is historically available and publicly accessible on the Internet and therefore did not require ethical clearance.

Research Limitations

The objective of this research initiative was exploratory in nature and best addressed using a mixed methods approach. Specifically, the dynamic nature of the Internet, web content, and a lack of quality control around the systematic collection of global user population data, limits the quantitative data cited. It is recognized that in mapping the Internet user populations, there are spaces where these populations cannot be reached. For example, the 'Deep Web' (Bergman, 2001; Sherman & Price, 2001), is a space on the Internet where resources are impossible to reach because they are not hyperlinked outside of the webspace. And the 'Dark Internet' (Labovitz et al., 2001) is a difficult space for data collection due to the intentional isolation of peer-to-peer and military networks on the Internet. Although data were corroborated and the findings of this report were validated, there are limitations to this work.

Findings

It is widely recognized that the progenitor of the current Internet was the *Advanced Research Projects Agency Network* (ARPAnet), conceived in 1966 by a group of academic computer scientists working for the United States Department of Defense (National Research Council, 1999). ARAPnet was to become a mechanism by which U.S. military research networks and universities could be electronically interconnected, so that information would efficiently, instantaneously, and securely flow between multiple locations. Although the Internet of 2007 is vastly larger than the fledgling ARPAnet, its underlying communication protocols (immediacy, reach, transparency), and network design (openness, scalability, democratic values) still embody the primary objectives of the original designers. This consideration brings us to the first research question: What are the implicit values and cultures inherent in the technical design of the Internet?

Question One

Value Free

As Reeder et al. (2004) suggest, the creators of the Internet were predominantly "Anglo-American engineers and scientists. Their ethnic and professional cultures value aggressive/competitive individualistic behaviours. In addition, these cultures value communications, characterized by speed, reach, openness, quick response, questions/debate and informality" (pp. 91-92). With the early iterations of the Internet emerging primarily in the United States, and designed for use within an academic-military-industrial complex, it is not surprising that this network reflects the values and cultures most prominent within western society.

This dominance of western culture and value systems online raises the issue of *Internet Imperialism*. Douglas Rushkoff (1996) and Alan Hedley (1999) argue this point when they suggest that the Internet has created possibilities for cultural imperialism on a massive scale and could result in the rapid movement of ideas that will destabilize other 'non-western' societies. Specifically, Izumi Aizu (1995) suggests that Japanese traditions will suffer from the intrusion of the western values dominating the Internet. Of relevance to Aizu's concern is a study of Japanese-American online collaborations where Japanese students, "face power inequity as they deal with someone else's dominant perspectives"

(Hamada & Scott, 2000). Perhaps this 'power inequity' and 'dominance', as experienced by the Japanese students, is engendered and amplified by the embedded western values and dominant language (English) in the medium of collaboration (i.e., the Internet).

To explore the Internet's inherent values of speed, quick response and immediacy, Google inc. was studied. This particular webspace was selected, given the fact that, at this historical moment, Google is the world's most popular search engine and third most active website on the Internet (Alexa, 2007). Within the ten statements of its corporate philosophy, Google clearly articulates that, "*Fast is better than slow" (*speed*),* "*The need for information crosses all borders*" (reach), "*You can make money without being evil" (*transparency*),* and "*Democracy on the web works*" (democracy) (Google, 2006). These value statements are significant, as this corporation virtually controls all the global Internet traffic with 'four out of five searches' conducted by the search engine (McHugh, 2003). This technological search platform has been so successful that a new verb was added to a western lexicon in 2002: 'to google', meaning "to carry out a Web search" (American Dialectic Society, 2002). A domination of the Internet landscape by Google denotes an explicit (and implicit) support of the underlying values of a network that promotes immediacy, reach, transparency and democratic values; therefore, the Internet is not 'value-free'.

Culture of Commercialization

Although the Internet has spawned a unique electronic 'barter' economy based on file sharing and peer-to-peer networks (e.g., Napster, Kazaa, Skype), a *culture of commercialization*, where businesses attempt to control the diverse online communities for commercial ends, has had a comparatively longer online history. Of particular concern for educators is the way in which this commercialization is shaping the 'favorite' websites of young Canadians: "almost all (94 percent) of students' top (favourite) 50 sites include marketing material. Although advertising is ubiquitous, marketing messages are also often embedded in content. For example, every game on the popular site *Candystand,* incorporates images of various Lifesaver products" (Media Awareness Network, 2005, p. 16). In academia, this is of specific consequence to a post-structuralist critique of the Internet, where recognition of a political economy (i.e., buying search terms) and an increasing commercialization of children's preferred websites can be unearthed. The manifestation of this commercialization on the Internet is reflective of a culture imbued with western values and a strong interest in capitalism. Therefore, as a (cyber)space, it may be characterized as representing a 'culture of commercialization'.

Corporations and 'Net Neutrality'

There is an increasing tension around corporate involvement in regulating the traffic flows on the Internet. Ironically this debate is known as "Net Neutrality" (Thierer, 2004), and represents a struggle to keep the Internet free from increased manipulation by phone and cable monopolies who control the majority of the world's Internet access to information through their data lines. Net neutrality, as a movement, is essentially concerned with preventing legislation that would allow members of telecommunication corporations to act as 'gatekeepers' with the ability to regulate content distribution on the Internet by charging toll fees for popular websites like youtube.com and myspace.com. This gate-keeping would in effect restrict the modes of communication allowed on the network. If an individual (or school) were unable to pay these toll fees, they would be limited in the content and contact they could have over the Internet. This would also drastically reduce the possibilities for intercultural collaborative inquiry across global regions as corporations essentially regulate, through a priority pricing model, who can (and cannot) gain access to broadband Internet applications and portals that contain multimedia rich video and images. The general concern with the Net Neutrality movement is that corporations are, in essence, formally moving to regulate what individuals can 'see and do' on the Internet. Within an open communication to MIT researchers in 2006, the inventor of the World Wide Web, Tim Berners Lee writes:

> When, seventeen years ago, I designed the Web, I did not have to ask anyone's permission. … I tried then, and many people still work very hard still, to make the Web technology, in turn, a universal, neutral, platform. It must not discriminate against particular hardware, software, underlying network, language, culture, disability, or against particular types of data….
>
> The Internet is increasingly becoming the dominant medium binding us. The neutral communications medium is essential to our society. It is the basis of a fair competitive market economy. It is the basis of democracy, by which a community should decide what to do. It is the basis of science, by which humankind should decide what is true. Let us protect the neutrality of the net (Berners-Lee, 2006).

Deloitte's (2007) Telecommunication Prediction Report for 2007 lists Net Neutrality as one of the most contentious future debates around a culture of commercialization surrounding the Internet and World Wide Web. Their report states, "advocates of net neutrality argue that any attempts to prioritize traffic would undermine the fundamental freedom of the Internet: the ability of any user, anywhere in the world, to use any service, content or platform. Opponents, however, argue that their business models are undermined by bandwidth hungry applications, particularly those with video content" (p. 4). This discourse is likely to develop into a more prominent one in educational circles as it becomes known that regulating the Internet would drastically limit the dynamic nature of the medium, and create an even greater global digital divide. The Net Neutrality movement has, in itself, mobilized a community around protecting an existing 'democratic culture' of the Internet; one that is deemed by the inventor of the World Wide Web to be 'neutral'; however, such neutrality is in question given the embedded values and cultures found within the medium.

Cyberculture

There are also those who contend that the Internet does not have an embedded commercial culture, but instead is a venue where entirely 'new' cultures might emerge. One proponent of this perspective is Castells (2001) who sees cyberculture surfacing in representation of the existing culture of scientific and technological excellence "enlisted on a mission of world domination" (p. 60). Such (cyber)culture, if a new form, is still emergent in light of the values (scientific and technological) enshrined by the original architects of the Internet. Charles Ess (2002) would suggest there might be a new third identity formed online; in this case he points to a 'global cosmopolitan'. In his definition, a (cyber)cultural aficionado emerges as an individual adept at navigating freely online, and "deeply understands and can maneuver comfortably among multiple cultural worldviews and communicative preferences. These cosmopolitans engage with one another via global forms of CMC in ways that preserve and enhance foundations of culture, rather than simply colonize them into a single homogeneity" (p. 232).

Question Two

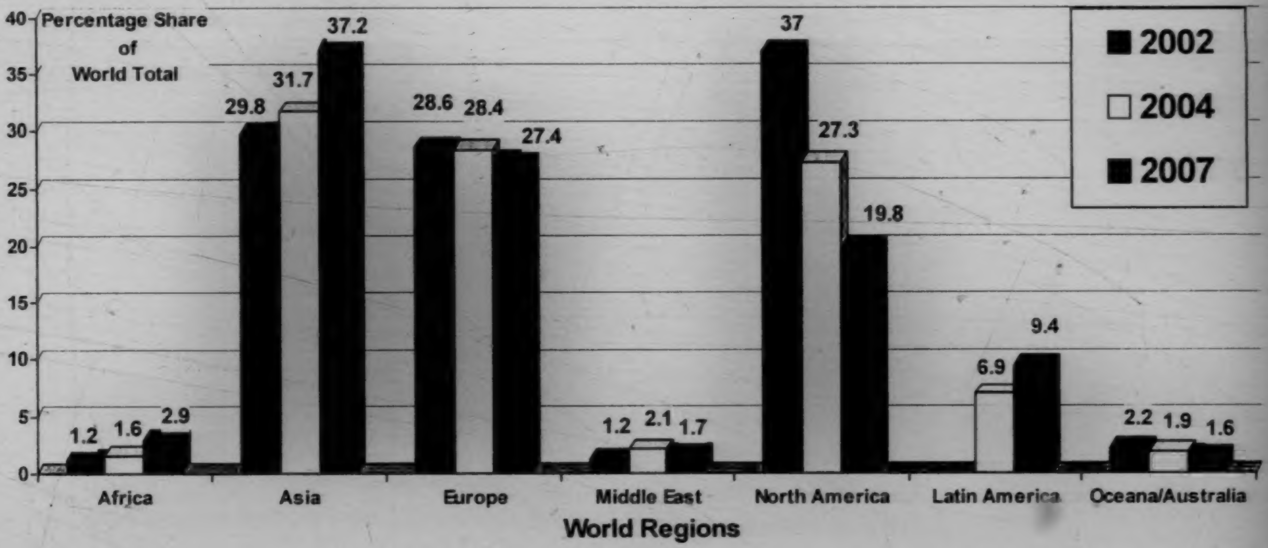
Diversity and Fluidity of User Populations in Cyberspace

Popular culture initially branded the Internet as a metaphorical "information superhighway" (Gore, 1991). This metaphor communicates images of an entity infused with great speed and reach, stretched along a visually linear (and fixed) 'superhighway'. Such imagery may be an extension of western society's explicit support around Euclidean plane geometry and its privileging of the linear qualities of the physical world. However, given the constant demographic shifts of both language and population on the Internet, a more accurate portrayal of this dynamic (cyber) space would be to evoke an organic metaphor of 'clouds'.

To conceptualize the Internet as a dynamic formation of clouds constantly in motion retrieves Marshall Mcluhan's descriptions of the electronic Global Village as an 'acoustic' space "built on holism, the idea that there is no cardinal center, just many centres floating in a cosmic system which honors only diversity. The acoustic mode rejects hierarchy; but, should hierarchy exist, knows intuitively that hierarchy is exceedingly transitory" (Mcluhan & Powers, 1989, p. 10). As other world regions contribute to new formations within the 'billowing clouds of the Internet', they will also (re)shape the many centres of cyberspace, and the entire cultural 'tempo' of the network will be impacted. This consideration then brings us to the second research question: How are online user populations and dominant languages shifting on the Internet?

The current mass of the Internet's interconnected clouds is growing to encompass over 1.2 billion users (Internet World Statistics, 2007a) and affecting a drift away from a primarily North American population in cyberspace to one populated by citizens of other emerging global economies. Over time, this changing online demographic has the potential to bring about a fundamental shift in the dominant values of the Internet as the topological structure itself changes with the fluidity of the online populations.

A primary shift in online populations is illustrated below where Asia can be seen to have dramatically gained percentage share of the world total between the years 2002-2007. Over this same period, North American users have been in steady decline as the dominant global population of the Internet. Perhaps even more indicative of the imminent changes to the Internet's user demographics is an understanding that the current penetration into the Asian population stands at approximately 10% while in North America over 70% of the population has Internet access (Nielsen//Net Ratings, 2007). As the Internet penetrates further into the billions of people in Asia, the online population will dramatically change, as will the services, applications, webspaces, structures and search engines that support this multitude.



Percentage Share of Global Internet Utilization by World Region 2002-2007

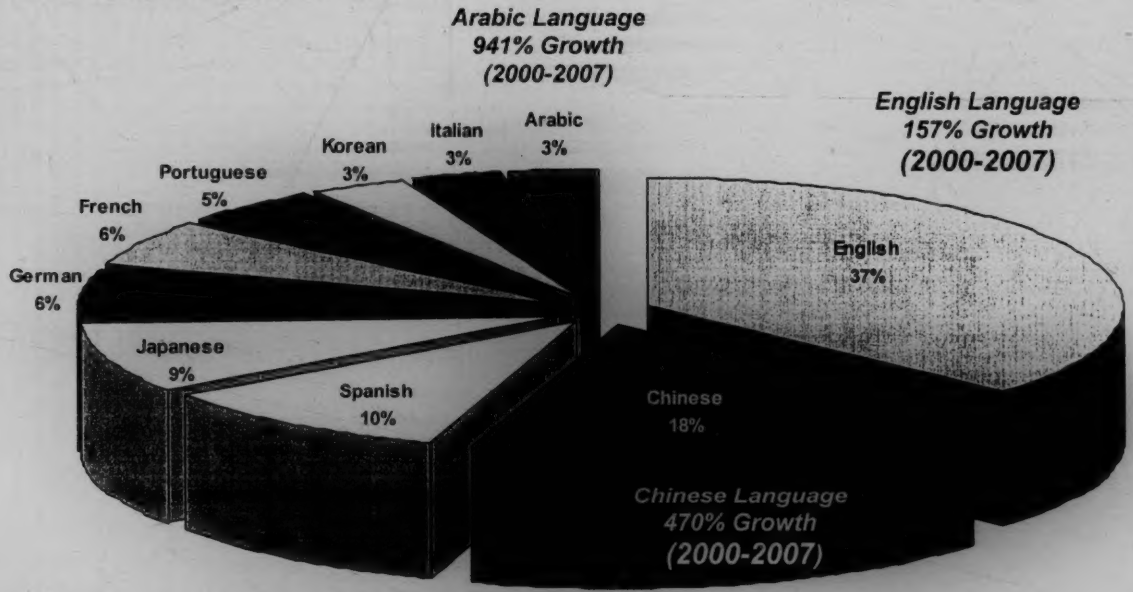
Data Source: Compiled from data published by Internet World Statistics (2007a) between the years 2002-2007.

As a general comparison between countries within these world regions, one would find that China currently has 162 million unique users online, in comparison to Canada's total online population of 22 million - a six fold difference (Internet World Statistics, 2007b).

It should be noted that many of these connections to the Internet will not be broadband (high-speed) connections. An important consideration, for online intercultural collaborations that utilize synchronous voice or video on the Internet, will be an understanding of the global digital divide among global Internet users with broadband connections and those with 'lower' speed connections to the Internet. Although research out of the Organization for Economic Cooperation and Development (OECD) countries (e.g., Belgium, Canada, Hungary, Mexico, Poland, and Turkey), does point to a trend in which the number of broadband subscribers is increasing rapidly. In June 2005, there were 136 million broadband subscribers across OECD countries, while in June 2006 this increased to 181 million, resulting in a 33% increase over the year (OECD, 2006).

Shift in Language

With language comes culture; and so it is with the Internet and the Anglo-Americans engineers who promoted English as the *lingua franca* of the medium. As illustrated in the pie chart below, English continues to dominate the overall content and discourse of the medium with 328 million Internet users speaking the language (37% of the network's total). It is also interesting to note that the number of Chinese speaking Internet users has grown 392% in the last seven years (2000-2007), thus documenting the rising number of online participants from Asia. In comparison, the number of English speaking Internet users has grown by only 140% over the same period of time, leaving it ranked 6th out of the top 10 languages in terms of overall growth. The language with the most change has been Arabic (932%), with approximately 28 million Arabic speaking people communicating online over the past seven years. This suggests that the current hegemonic position of English in online discourse will change as other nations become more active participants in defining cyberspace. It also suggests that, once individuals see themselves represented in the medium (either linguistically or visually), then they are more apt to participate in it's (re)construction - much like students and curriculum within an educational context.

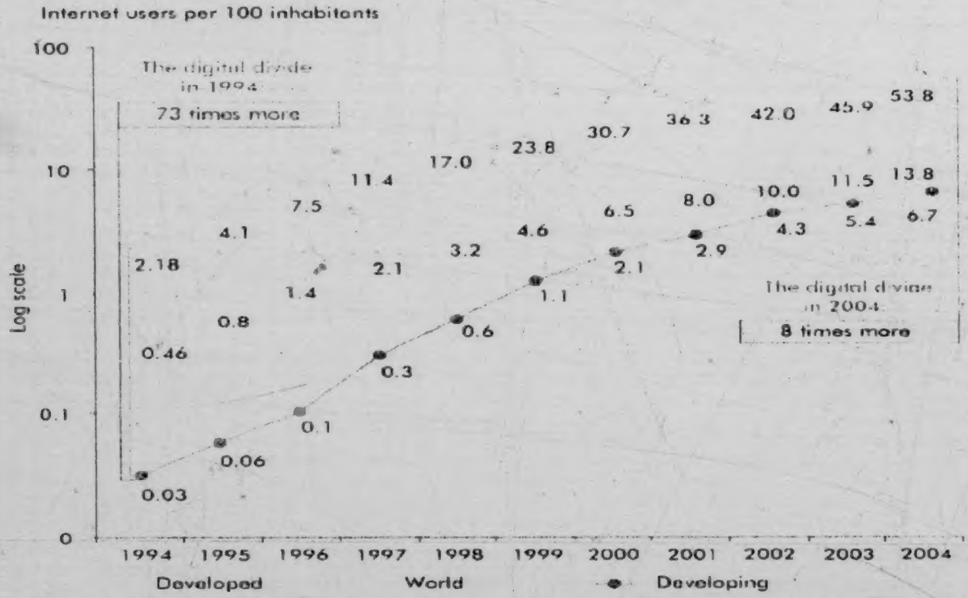


Percentage Share of the Top Ten Global Languages on the Internet as of June 30, 2007

Data Source: Compiled from data published by Internet World Statistics (2007c).

Global Access to the Internet – Ubiquity or Digital Divide?

As the pace of globalization sweeps ambitiously across the globe, so too does an increase in the global utilization of computers and access to the Internet. The International Telecommunications Union (2004) points to a shrinking digital divide over the decade from 1994-2004, in terms of the number of fixed phone lines, mobile subscribers, and Internet users. The graph below illustrates that in 2004, the developed world had 8 times the Internet user penetration rate of the developing world, whereas a decade before, the digital Internet divide was 73 times greater.



However, the Pew Global Attitudes Project (2006) points to the significant gap in the digital "have's" and the "have-nots" (i.e., digital divide) in terms of computer and Internet access. As stated in this research, "in Pakistan and Indonesia, fewer than 10% say they go online as do only 15% of Russians and 14% of Indians". This report goes on to point out that education level and income are the predominant determinants of those who use technology in general, and that people who have higher education levels and socio-economic status are more likely to use computers and access the Internet:

> In India, the rate of computer usage ranges upward from 36% among those with at least some college education, compared with rates ranging downward from 14% among those with less education. In Spain, fewer than a third of those with a primary level education or less use a computer while usage rates range upward from 61% among those with a secondary level or higher degree (Pew Global Attitudes, 2006).

The digital divide among genders has also shifted dramatically over time, from North American men dominating the Internet in 1996, to women in North America currently accounting for the majority of the online population (Pew Internet and American Life Project, 2005). An important clarification here is that this gender equality is not generic to all regions of the world, but a trend worth considering within the shifting online user populations.

In term of the generational divide to Internet utilization, young people are the heaviest users of the Internet. In 2002, 8 in 10 North Americans under the age of 30 were online and, by 2005 "in countries around the world with relatively low overall internet use, the most dramatic increase occurred among the young. In China and India, the rate of internet use rose 15% among those under 30" (Pew Global Attitudes Project, 2006). It can be expected that in countries with increasing penetration of the Internet into their populations that the younger generation will dominate cyberspace, which may in turn open possibilities for educators to connect school age children and teachers via the Internet for intercultural collaborative exchange, especially if the global digital divide continues to be bridged.

In speaking about the digital divide, Elizabeth Daley, Executive Director of the Annenberg Center for Communication and Dean at the University of Southern California, posits, "from my perspective, probably the most important digital divide is not access to a box. It's the ability to be empowered with the language that that box works in. Otherwise only a very few people can write with this language, and all the rest of us are reduced to being read-only" (Lessig, 2004).

An Interconnected Global Online User Population

Many complex network researchers (Watts & Stogratz, 1998; Barabási & Albert, 1999) have discussed the small world phenomenon that Stanley Milgram (1967) first proposed in his 1967 research experiment, which hypothesized that any individual in the United States of America could be reached via a short chain of people. His research indicated that people in the U.S. were connected by an average of six acquaintances, thus the phrase 'six degrees of separation' was made popular.

Columbia University researchers Dodds et al. (2003) wanted to see if this small world study would hold true with individuals connected to the Internet. They therefore conducted an experiment that had people from around the world try to get a message - via the Internet -- to a stranger somewhere else on the planet (e.g., Norway, India, California). Their research discovered that, hypothetically, anyone online can make contact with any other Internet user within a chain of 5 to 7 emails – an average of six degrees of separation. As Dodds et al. (2003) point out, the people in their study were not highly connected individuals, but were standard Internet users: "We conclude that social search [on the Internet] appears to be largely an egalitarian exercise, not one whose success depends on a small minority of exceptional individuals" (p. 828). This important research illustrates the interconnected nature of user populations on the Internet, and puts a keen eye on the possibilities for educators to connect interculturally online within a very short chain of acquaintances. To collaborate interculturally on the Internet, in effect, supports a much deeper connection with the small world phenomenon in that globally we are an interconnected species.

Intercultural Collaborative Inquiry on the Internet: The Canadian Context

Concurrent to these global changes to the online user population, educational research suggests that an overwhelming majority (86%) of Canadian schools are now using broadband (i.e., high speed) technologies to access the Internet (Ertl & Plante, 2004, p.14). In Alberta, the *SuperNet* has connected every publicly funded Alberta school, library, hospital, and government facility, with a broadband network that enables high-speed Internet access to 4,000 buildings in over 429 urban and rural communities in the province (Alberta Education, 2005).

With user populations on the Internet continuing to grow among countries all over the world, and a high level of Internet connectedness embedded in Canadian students' educational contexts, the pedagogical potentials clearly exist for intercultural collaborative inquiry on the Internet. By engaging in such endeavours, educators commit themselves to opportunities for students to broaden their epistemological orientations. There is also a tangible benefit to this activity in the preparation of educators who will be working with K-12 students as they discover and shape their own unique understanding of the world. Perhaps through intercultural collaborative inquiry on the Internet, preservice social studies teachers in particular (many of whom do not have significant intercultural experience outside of the faculties of education) may better understand the interconnected nature of a world brought closer together by globalization's nascent effects.

Considerations for Future Research

Educational researchers interested in globalization, and the Internet's impact on educational practice, have many essential questions to ponder as the medium becomes ubiquitous to our educational contexts, and within society in general. However, in keeping with a discourse on values, cultures and online user populations as related to educational practice, the following questions might be considered:

- How do Canadian students conceptualize the notion of global citizenship as they socially participate within a cyberspace that is dominated by many different cultural groups?
- To what extent are teachers connecting interculturally on the Internet as a spontaneous activity in their pedagogic practice?
- To what extent are teachers and students polarizing around ideologically homogeneous and/or ethnically sealed (cyber)spaces?

This final question is important to educational practice and societies in general. In contrast to the considerations noted in this paper, the radical demographic changes currently being enacted on the Internet may indeed go unnoticed by educators and students if individuals create, experience and navigate only those online spaces that reinforce their 'preferred' worldview. Further research is warranted into the potential emergence of positive feedback loops (i.e., echo-chambers) on the Internet, whereby conditions arise in online communities such that participants find their own opinions constantly 'echoed' back to them and, in doing so, reinforce a certain sense of truth that resonates with their individual belief systems. The echo-chamber effect is a distinct challenge for educators interested in supporting multiple perspectives and critical thinking via online intercultural collaborative inquiry. This phenomenon, if emergent on the Internet, would be paradoxical in light of comments made by the chief architect of the World Wide Web, Tim Berners-Lee: "the diversity of cultures in this world is really important. It's the richness that we have which, in fact, will save us from being caught up in one big idea" (as cited by Ess, 2002).

Conclusion

This paper argues that the Internet is not technologically instrumental, but within its inherent design has embedded values (e.g., democracy, commercialization) and communicative preferences (e.g., immediacy, reach, transparency). Intercultural collaborative exchanges on the Internet therefore require an attention to supporting a wide range of cultural values and communicative preferences in an online context, so that students and teachers might preserve a respect and appreciation for cultural difference, despite the current technical design of the Internet. It was also the intent of this paper to elucidate the dynamic nature of online user populations where the demographics are in constant flux. In recognizing the values and culture(s) inherent in the design of the network, along with the ongoing demographic shifts in online languages and populations, there rests the pedagogic possibilities for educators and students to work towards a realization of intercultural collaborative inquiry on the Internet.

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CHAPTER 5

Echo-Chambers and Positive Feedback Loops: The Complex Nature of Echoing Voices on the Internet

"Whenever you find yourself on the side of the majority, it's time to pause and reflect."
~ Mark Twain

Introduction

The Internet is a unique educational space that is currently being (re)defined by the emergence of blogs, online discussion forums and other socially open webspaces (e.g., wikis). A *blog* is a personal narrative or diary on the Internet where an author posts a message or initiates a dialogue, and an audience of readers may, in turn, respond with a commentary. Blogs cover an endless variety of topics and opinions that represent the diversity of the authors' interests and the readerships' responses. The *blogosphere,* or network of interlinked blog commentaries on the Internet, currently stands at over 95 million active blogs, and is dynamically changing with 18 updates per second (Technorati.com, 2007a). This online journaling activity is a global occurrence on the Internet with 175,000 new blogs created each day (or 2 new blogs actualized per second of every day), each of which are being updated by the minute, hour, day, or week.

The rapid emergence of a new generation of collaborative spaces on the Internet offers students and educators access to a plethora of 'global' conversations and online communities. In terms of blog posts by language, the current leader in the global blogosphere is Japanese with 37% of the overall blog discourse, followed by English at 33%, Chinese at 8%, and Italian at 3% (Technorati.com, 2007b). In conjunction with the more traditional textual representations of online discourses, these blogs are increasingly being embedded with audio, images and video posts.

Within such a large array of communicative possibilities, it might be assumed that the intellectual exchanges of the participants would be noticeably varied, and as a result a critical discourse would thrive in this diverse and emergent global (cyber)space. However, this may not be so and one must ask: *Are blogs and online discussion forums providing opportunities for critical discourse or are they, ironically, presenting significant challenges to intellectual diversity and critical thought due to a phenomenon known as the echo-chamber effect?*

The echo-chamber effect is a condition arising in an online community where participants find their own opinions constantly 'echoed' back to them, thus reinforcing a certain sense of truth that resonates with their individual belief systems. In terms of a consideration for educational practice on the Internet, the inherent tension created by the echo-chamber effect is represented by notions of unity versus diversity in online communities and discourse.

This paper explores how participants within online collaborative spaces tend to act in very human ways: that is, they gravitate toward and are more comfortable communicating with people who share their ideas, conceptions of the "truth", cultures, and communication styles. Yet fundamental differences exist between face-to-face and virtual communications. Specifically, virtual communications often have fewer markers or visual cues by which to 'read' the implicit tests of authenticity; many of which are subconsciously present by one's exposure to "cultural microrhythms" (Condon, 1982). During an online dialogic exchange one might ask: To what extent do I really know that the person I am communicating with shares my thoughts, belief system, ideas, and values?

This "are you really who you seem to be" dilemma is a historical human concern, one that has led to the creation of folktales such as Little Red Riding Hood (Germany) and Lon Po Po (China) to warn our children not to fall victim to the deceit resident in the world (forest). At least some of the contemporary 'digital' wolves are less visible than those of children's stories, and while the human seduction to be fooled may take different forms, the digital medium has the potential to obscure the nature of this deception by the echo-chamber effect. Nevertheless, human beings are prone (in all areas of life) to be drawn to ideas that resonate with our own values and, thus, we gravitate to online opinions that constantly 'echo' our own ideas back to us. In reinforcing a certain sense of truth that resonates with our individual belief system, a mimetic phenomenon is actualized that metaphorically creates an echo-chamber on the Internet. My intent in this paper is to establish a general understanding of this phenomenon through a narrative inquiry (Clandinin & Connelly, 2000) and social network analysis (Marsden, 2005), while situating it in a discussion of the implications to teaching, learning and pedagogical practice.

Theoretical Context

This research activity is situated within a theoretical framework of social constructivism, which recognizes that social processes are instrumental to the building of intra and interpersonal knowledge (Davis, 2004; Vygotsky, 1978). It also draws upon an understanding of complexity theory (Sage, 2003) to assist in reading the self-organizing nature of the Internet as a complex adaptive system. While network theory (Latour, 2005; Watts, 2003; Barabási, 2002), a subset of complexity theory, recognizes the significance of multiple 'agents' (e.g., organizations, humans, computers, objects and the environment) as contributors within a heterogeneous (social) network on the Internet.

Network theory opens possibilities for the exploration of the complex social attributes of human and non-human entities, and the implications of power relationships on intercultural exchanges enacted on the Internet, in order to, "find a way of talking about the social-and-the-technical all in one breath" (Law, 1991, p. 8). Complexity and Network theory read the condition of the echo-chamber effect as emergent to situations in which information or ideas are amplified through positive feedback loops inside an enclosed social space. A wide reading of the literature suggests that a content analysis documenting the emergent educational issues of self-reinforcing communities on the Internet (i.e., echo-chamber effect), nested in an understanding of positive feedback loops in the complex system of socially 'open' dialogic spaces online, is novel to educational research literature.

Rationale for the Study

In educational contexts, blogs and discussion forums are increasingly being turned to as a means by which students and teachers can access an authentic or 'global' discourse. The Media Awareness Network's (2005) *Young Canadians in a Wired World* research project indicates that, on an average weekday, 8-14 percent of elementary school students (Grade 4-6) and 17-19 percent of secondary school students (grades 9-11), engage in blogging or writing an online diary (p. 20). With this level of interest in elementary and secondary schools students' lives, educators at all levels will soon begin to consider weaving students' online dialogic experiences into their own pedagogic and professional practice. Research on the educational implications of blogging and other socially open webspaces is just beginning to appear in the research literature and is primarily concerned with the pedagogical use of blogs to enhance student writing or teacher reflections (Media Awareness Network, 2005), as opposed to the social implications of a mimetic echoing of opinions inside the blogosphere.

Research Questions

1. Are blogs and online collaborative spaces providing opportunities for critical discourse, or are they, ironically, presenting significant challenges to intellectual diversity and critical thought as participants engage only in the hermetically sealed dialogue that resonates with their unique viewpoints?

2. How can complexity thinking inform the emergence of a phenomenon of echoing voices within online collaborative spaces?

The data addressing these questions, as well as the implications of the findings, are discussed in this paper from a perspective that has an interest in intercultural collaborative inquiry on the Internet.

Research Method

The blogosphere (along with other emerging cyberspaces such as collaborative wikis and podcasting venues) provide very public locales where individuals recount, listen to, and comment on the storied nature of human existence. Narratives found in blogs often communicate how individuals 'read' the world, and in doing so share (and reconstruct) the events, topics, and people that are close to their consciousness. Bruner (1986) suggests these narratives are the means by which human beings organize their personal knowledge. Connelly and Clandinin (1990) declare that this personal knowledge is the basis for our actions and stories about the social world. In their discussion of 'narrative inquiry' as a research method, they claim that "humans are storytelling organisms who, individually and socially, lead storied lives. The study of narrative, therefore, is the study of the ways humans experience the world" (Connelly & Clandinin, 1990, p. 2).

To establish a general understanding of the echo-chamber effect on the Internet, and how this phenomenon might impact the many ways students and teachers experience the virtual world, a narrative inquiry was selected that draws on my own autobiographical writing as the data source (Clandinin & Connelly, 2000; Pinar, 1988; Grumet, 1988). As a site of study, the blogosphere was selected due to its rapid growth and potential impact on educational practice in the discipline of social studies. Narrative inquiry has been taken up in this study as a unique medium for data representation that helps explicate my conduct in an echo-chamber within the blogosphere. As Peshkin (1985) reminds us, "ideas are candidates for others to entertain, not necessarily as truth, let alone Truth, but as positions about the nature and meaning of a phenomenon that may fit their sensibility and shape their thinking about their own inquiries" (p. 280). As a method, narrative inquiry draws attention to the inter- and intra-subjective (Davis, 2004) experiences nested within one's interactions within socially open webspaces such as blogs.

As a means to account for the potentially more insidious implications of the echo-chamber effect, a limited online social network analysis (Marsden, 2005; Watts, 2004; Barabási, 2002) of Jeffrey Weise (a 16 year old male school shooter) was conducted in addition to my narrative inquiry. Online social network analysis is a relatively new research method that focuses on Computer-mediated communication (CMC), and patterns of relations among people and communities on the Internet. As Garton et al. (1997) suggest, "Social network analysts seek to describe networks of relations …tease out the prominent patterns in such networks, trace the flow of information (and other resources) through them, and discover what effects these relations and networks have on people and organizations". In general, when a computer network connects individuals, groups or organizations, they can become enmeshed within a set of social relationships (e.g., friendship, Internet work, information exchange). This is then deemed to be an online social network.

In this particular inquiry, the online dialogic patterns of Jeff Weise were mapped across several online discussion forums and blogs, into his final participation in the www.nazi.org discussion forum. This particular online social network analyses may be referred to as one concerned with an "*ego-centred*" (Wasserman & Faust, 1994, p. 53) perspective of network interactions where the focal person (ego) was Jeff Weise. The remnants of Weise's online activities are very publicly strewn across the digital landscape of the Internet, and his online social network presents a particularly disturbing insight into the implications of echoing voices within online discussion forums. No assumption is made in this paper that an entire coherent social network ever existed for Jeff Weise; however, given the limited scope of this study, some of the boundaries of Weise's social network began to emerge as data were collected. The last of which seems to be the 'www.nazi.org' discussion forum.

Research Limitations

The objective of this research initiative was exploratory in nature and therefore best addressed qualitatively in a descriptive versus predictive manner. This research study provides insight into the social implications of the echo-chamber effect (i.e., positive feedback loops) on the Internet within two specific and deeply complex situations. It should be noted that the echo-chamber effect is an emergent online phenomenon and likely exists in varying degrees and at many different levels of group polarization, all of which are dependent on the size and history of an online community, and the self-reinforcing topological structure of hyperlinks within the different socially open webspaces. Although there are clear limitations to the scope of this work, it is hoped that this research provides an impetus for ongoing research into the emergent and complex nature of positive feedback loops online and the assumed implications of the echo-chamber phenomenon to educational praxis.

Narrative Inquiry: Echoing Voices and Political Blogging

Let me begin with a confession: unbeknownst to me, I was trapped in an echo-chamber during the 2004 United States presidential election and emerged from this narcissistic experience with an intangible sense of comfort from having only read and written that which resonated with my own belief system.

It began in the months leading up to the November 2004 election, while I was searching for information on the American public's overall sentiments toward the candidates - George W. Bush and John Kerry. I was reluctant to accept the North American television commentary or polling data due to my distrust of the expertly crafted media messages of the major news networks. This attitude is clearly representative of my nascent post-modern state, or what Blackburn (1994) would define as a "retreat to an aesthetic, ironic, detached, and playful attitude to one's own beliefs and to the march of events" (p. 295).

As I rejected the media messages of television, I subsequently found myself embracing a 'new media' space on the Internet where blogs were allowing individuals an opportunity to comment publicly on the political landscape of the U.S. election. I sensed that blogs would be a venue for a more authentic voice of the American public and would in turn embed me within the 'true' pulse of the electorate where I could interactively engage in the dialogue of an online community. This desire to use others as a method of knowledge acquisition is insightfully addressed by Karen Stephenson, when she suggests that "experience has long been considered the best teacher of knowledge. Since we cannot experience everything, other people's experiences, and hence other people, become the surrogate for knowledge. 'I store my knowledge in my friends' is an axiom for collecting knowledge through collecting people" (Stephenson, Internal Communication Focus, no. 36, undated).

Millions of other people were also turning to the Internet, and blogs specifically, for a more grassroots perspective on American politics. By March 2004, blogs had firmly established themselves as a popular venue for personal publishing. According to the Pew Internet & American Life research, "27% of Internet users say they read blogs...by the end of 2004, 32 million Americans were blog readers…at least some of the overall growth in blog readership is attributable to political blogs" (Rainie, 2005, p. 1). Worth noting is the early excitement surrounding the Howard Dean campaign and the political activism found on 'www.blogforamerica.com' where countless blog posting resulted in "115,632 handwritten letters from (blogforamerica.com) supporters to eligible voters in the Iowa caucuses and New Hampshire primary" (Cornfield, 2005, p. 2).

One could find almost any political perspective within the blogosphere, and so I continually found myself returning to those blogs where I could easily (and comfortably) communicate with like-minded individuals. At times, the online discussions I experienced encompassed some minor disagreements; however, there appeared a tacit belief among users that this piece of (cyber)space entertained "like" sentiments only, and was not for the cavalier broadcasting of antithetical or hostile perspectives. Granted many participants in these blogs believed they were to be online spaces for political solidarity, much like the face to face gathering points of political pundits. If a new participant to a *Democratic blog* were to demonstrate any strong Republican (right-wing) views, a mob of voices would berate the outsider into submission, until eventually the individual was shunned and duly rejected by the virtual community. In essence, the ability to carry out a challenging conversation that had the potential to enlighten the forum to another perspective was being drowned out by a collective echo of disdain. As an educator, an awareness of the significant challenges to intellectual diversity and critical thinking within an online environment began to emerge in my consciousness.

Ideally, the divergent voices in our political discourse could have been embraced and celebrated. As Robins (1995) would suggest, "we must begin from the real world, which is the world in which virtual communities are now being imagined. And we must recognize that difference, asymmetry and conflict are constitutive features of that world" (p. 152). In an embodied (face to face) situation, where people are not overly familiar with one another and yet fundamentally disagree on an issue, the social rules of decorum often lead those involved to suppress their respective viewpoints so as not to offend the other party. However, within the blogosphere, due to the anonymity and fluidity of identity possible on the Internet, these nuances were frequently disregarded for a harsher (and more amplified) response to voices that descend from our own. I wonder; which of the social responses - face to face or virtual - is more ingenuous to articulating one's perspective(s)?

Although it was most interesting to be a participant in such an ostensibly 'enlightened' online community of thousands, the limitations to a critical dialogue within the multiverse of cyberspace became painfully apparent on the night of the Presidential election. As I watched George W. Bush and the Republicans take a commanding lead in the election, I realized that I had indeed been trapped in an echo-chamber; a close-minded, white-walled space that continually bounced back my own sense of truth. In the end, it was through the myriad of interlinked opinions within the Democratic blogosphere by which I had reinforced my own (and others) misguided belief that a John Kerry presidency was inevitable. The essence of this experience is revealed in the ancient notion of mimesis, where many voices sing in harmony to a collective illusion.

Cass Sunstein, a distinguished University of Chicago Professor of Law and Political Science, expressed this concern about the polarizing effects the Internet might have on groups in his book *Republic.com*. He suggested, prior to the emergence of blogging's popularity, that the Internet has the potential to noticeably increase the opportunities for individuals to hear "echoes of their own voices and to wall themselves off from others" (Sunstein, 2001, p.49). When Sunstein (2001) conducted a random survey of sixty political websites, he found that only 15 percent had hyperlinks to sites with opposing perspectives on political issues; while 60 percent of the political websites linked directly to 'like-minded' sites.

This self-reinforcing topology of the political blogosphere then amplifies the ossifying tendencies of the echo-chamber effect and hermetically seals online spaces to other divergent perspectives. Barabasi (2002) supports this claim by suggesting that "the mechanisms behind social and political isolation on the Web are self-reinforcing: They alter the Web's topology as well, segregating the online universe" (p. 170). Such emerging phenomenon have the potential to blind educators and students to the ever-emerging cultural, linguistic and dialogic diversity online, in that they might only create, experience and navigate cyberspaces that reinforce their 'preferred' world view. To break from this condition, intentional pedagogic activities that bring students into contact with diverse perspectives (such as intercultural collaborative inquiries on the Internet), becomes a critical act in support of thoughtful educational practice(s) in a digitally interconnected era.

Online Social Network Analysis: Jeffrey Weise and a Nazi Echo-Chamber

An insidious and pathological case involving the echo-chamber effect on the Internet may be that of a sixteen year old mass murderer named Jeffrey Weise. This teenager was a member of the Chippewa American Indian Tribe of Red Lake, Minnesota, and a former student of Red Lake High School. On March 21, 2005, Weise murdered nine people, including his grandfather, a school security guard, a teacher, and several students at Red Lake High School before taking his own life.

Jeff Weise was an active participant in many different online communities and posted multiple messages under different pseudonyms. The digital remnants of these postings are strewn across the World Wide Web and offer an unusually high level of public insight into his virtually scribed thoughts and online activities. Of specific interest to this paper is the dialogue of an individual identifying himself as Jeff Weise from Red Lake, Minnesota, who used the screen name *Native Nazi* and *Todensengal* (German for Angel of Death) while publishing several comments during a five-month period between March and August 2004 on a Neo-Nazi discussion forum. This dialogic space, 'www.nazi.org', is run by the Libertarian National Socialist Green Party and promotes a Neo-Nazi philosophy through its online conversations and activities.

A peer of Jeffery Weise noted that he was an isolated student who had limited contact with others. "He was a goth," said Allan Mosay, 14. "He had no friends. He didn't communicate" (Haga et al., 2005). However, during an examination of his online conversations in the various discussion forums and blogs, he can be found to be surprisingly communicative and connected with others. For instance, at 'www.livejournal.com', Weise was linked to over 261 virtual 'friends'. It might be said that, in this regard, Weise was caught up in a virtuality where his identity was indeed fluid and his sense of self could float from one community to another on the Internet. Mark Poster (1990) describes the impact of (cyber)space on the subject's position as the body becoming disrupted, subverted and dispersed across different social spaces. In his essay *The Ecstasy of Communication*, Jean Baudrillard (1983) also speaks to this experience as "the end of interiority and intimacy, the overexposure and transparency of the world which traverses (the schizophrenic) without obstacles. He can no longer produce the limits of his own being, can no longer play nor stage himself, can no longer produce himself as a mirror. He is now only a pure screen, a switching center for all the networks of influence" (Baudrillard, 1983, p. 133).

Is it possible that Weise entered 'www.nazi.org' and, similar to my experiences in the political blogosphere, had his own belief system ossified through the *echo* of the online conversation? Excerpts of his dialogue, as retrieved from Google's Cache (2004), are republished below to provide a unique insight into Jeffery Weise's conversation and the subsequent echoing of his perspective throughout the online discourse:

Discussion Thread Title: Native American Nationalists?

Post by **Todesengel [Jeff Weise]** on **Mar 19th, 2004, 12:09am**
"My name is Jeff Weise, a Native American from the Red Lake 'Indian' reservation in Minnesota. I'm interested in joining the group, as I support your ideals and even though I am young, I still want to join. What is the age requirement (if any)?"

Post by ***BlueEyedDevil*** *on* ***Mar 20th, 2004, 12:39am***
"There is none that I am aware of; we welcome all ages and all nationalities, regardless of your back-ground. Our main goal here is to educate and inform--in hopes of creating a better world for all of us. I welcome you, Jeff! What brings you to the forum?"

Post by **Todesengel [Jeff Weise]** on **Mar 19th, 2004, 1:15am**
"Thank you. What brings me to the forum? Well, I stumbled across the site in my study of the Third Reich as well as Nazism, amongst other things. I guess I've always carried a natural admiration for Hitler and his ideals, and his courage to take on larger nations. I also have a natural dis-like for communism…"

Post by ***BlueEyedDevil*** *on* ***Mar 20th, 2004, 12:39am***
"I respect your open-mindedness; not everyone is so brave to think the way you do... I would like to see all Nationalists work together towards a common goal; there is much we can learn from one another."

Post by ***freenation*** *on* ***Mar 25[illegible], 2004, 5:01pm***
"There is a place for you, I hope you stick with us."

Post by **Todesengel [Jeff Weise]** on **Mar 25th, 2004, 8:27pm**
"Once I commit myself to something, I stay until the end..."

Post by ***binarymike*** *on* ***Apr 8th, 2004, 2:43pm***
"We welcome you, brother. It will take many combined minds for us to unite, and forge something out of nothing!"

Post by **Todesengel [Jeff Weise]** on **Apr 19th, 2004, 11:41pm**
"Hmn, after a recent discussion with some misinformed people I had to ask you guys, why are people so close minded? By the way, I'm being blamed for a threat on the school I attend because someone said they were going to shoot up the school on 4/20, Hitlers birthday, and just because I claim being a National Socialist, guess whom they've pinned?"

Post by ***atem*** *on* ***May 2nd, 2004, 11:12am***
"This is a time in which nationalists are demonized. Much as 'terrorist' indicates 'someone who disagrees with our global empire,' so does 'nationalist,' but the complexity of separating that term from 'patriot' will confuse the general population, so they use simple words like hate, Hitler, bigot, ant-semite, etc."

Post by **Todesengel [Jeff Weise]** on **May 26th, 2004, 2:27am**
"... I was wondering if there was a way to become a more active member, besides posting on this board I can't really think of anything else to do...Any ideas? I may young, but I'm willing to help." *Source: Google's Cache (2004)*

The personal situation of Jeffrey Weise, his socio-economic context, and the many other perturbations surrounding his life before the school shooting on March 21, 2005, – including this online dialogue and the echo-chamber effect – are deeply interconnected events. While one should not oversimplify the complex circumstances and dynamics that play into a tragedy such as the Red Lake shooting, it is important for the educational community at large to recognize that for young people, unmonitored and uniformed exposure to the Internet has the potential to draw them into potentially harmful psychological and physical activities.

In a document produced by the *Federal Bureau of Investigation*, six traits of student assailants are profiled, with one of them being that "the student regularly searches for web sites involving violence, weapons, and other disturbing subjects (p. 20); and access to computers and the Internet is unsupervised and unmonitored" (O' Toole, 2000, p. 23). In terms of the Red Lake shootings, contributing factors to this tragedy may indeed have been Weise's unmonitored computer access (note times of 'www.nazi.org' postings); however, it is also likely that a steady ossification of his immoral belief system was achieved by the echoing voices of an online hate group.

The Internet as a Complex System

How might complexity thinking inform the emergence of a phenomenon of echoing voices within online collaborative spaces? Waldrop (1994) defines a complex system as "a dynamic network of many agents (which may represent cells, species, individuals, firms, nations) acting in parallel, constantly acting and reacting to what the other agents are doing" (p. 5). While Davis et al. (2004) point to complex systems as phenomena that are:

> adaptive - that is, their dynamics are better described in terms of Darwinian evolution than Newtonian mechanics. Further, each involves a certain spontaneous self-organization, in which coherent collective activities or characters arise in the activities of individual agents. In brief, complexity is concerned with non-linear dynamics, emergence and self-organization. It might be defined as a formal attempt to explore how simple and sometimes non-purposive components in a system can self-organize, emerge or evolve into coherent, purposive and complex wholes…In more provocative terms - and revealing our own educational biases toward the science of complexity - such adaptive, self-organizing phenomena are *learning systems* (p. 2).

The Centre for the Study of Complex Systems (2007) at the University of Michigan describes a system as 'complex' if it is deemed to have a significant number of the following characteristics:

> **Agent-based:** The basic building blocks are the individual agents of the system.
>
> **Heterogeneous:** These agents differ in important characteristics.
>
> **Organization:** Agents are organized into groups or hierarchies. These organizations are often rather structured, and these structures influence how the underlying system evolves over time.
>
> **Dynamic:** The agents change over time. The dynamics that describe how the system changes over time are usually nonlinear, sometimes even chaotic. The system is rarely in any long run equilibrium.
>
> **Feedback:** These changes are often the result of feedback that the agents receive as a result of their activities.
>
> **Emergence:** The overlying concerns in these models are the macro-level behaviours that emerge from the assumptions about the actions and interactions of the individual agents.

The World Wide Web can be found to match many of the above noted characteristics, and as such could be identified in terms of a complex system. Of particular interest to how complexity thinking might inform the emergence of the echo-chamber effect on the Internet is the impact of 'feedback' on the agents and their activities within the complex system of the blogosphere. Within the feedback loops of a complex system, information circulates into the system, is modified, and then returns to influence the behaviour of the originator of the information or the initial condition. This feedback loop is either *positive,* in that it amplifies the information/ideas, or is *negative,* in that it dampens or challenges the information/idea flow.

Complexity science would then read the condition of the echo-chamber effect on the Internet as an emergent behaviour to situations in which information (or ideas) are amplified through "positive feedback loops" inside a blogging community. For instance, within a positive feedback loop in the blogosphere (i.e., the complex system), like-minded blog community 'agents' and their ideas are introduced to information or an idea that becomes amplified by repetition or exaggeration (i.e., positive feedback) to the point that a distorted "truth" emerges for that online community.

On the other hand, negative feedback loops in complex systems tend to dampen the mimetic effects of information flows, exaggerations or the repetition of ideas, and therefore lead to more stability in a complex system by regulating the polarization of 'agents/information/ideas' in any one particular direction. This is intuitive to a classroom collective that supports critical thinking and divergent opinions; one where new ideas and patterns of thought are generated when students challenge (and are challenged) to 'think outside of the box' - a negative feedback loop in pedagogic action. If amplifications continue to occur to a system in only one direction (i.e., echoing voices), and the agents therefore do not face any negative feedback (i.e., divergent information/ideas) that can challenge the system, then that system will become unstable and ultimately reach a breaking point or state of total collapse.

Positive and negative feedback loops are found across social, ecological, cultural and biological domains. Positive feedback loops can include phenomena such as global warming, real estate or stock market bubbles, and cancer cells; while negative feedback loops are manifest in the homeostasis of a healthy human body, price stability in a market economy or a classroom collective that supports an inquiry stance to learning.

To better understand the unique characteristics of the blogosphere (and the emergent behaviour of the system in terms of positive or negative feedback loops), the chart below compares the Centre for the Study of Complex System's (2007) models of complexity in ecology and the field of immunology, with my own conceptualization and understanding of the blogosphere.

Complex System Characteristics	**Blogosphere**	**Ecology**	**Field of Immunology**
Agent(s)	Individual blog authors, commentators & their ideas	Individual animals	Cellular material
Heterogeneity	Discourse interaction via text, audio, or video	Eating, nesting, breeding habits	Antigens, antibodies
Organization	Self-organizing topical discourse	Schools, herds, food chains	Cellular organization
Adaptation	Recursive & emergent adaptation	Hunting, mating, security	Immune response
Feedback	Positive feedback loops (self-reinforcing discourse) or negative feedback loops (dampening, challenging discourse)	Success or failure	Immune response
Dynamics	Spread of Ideas: Unity, diversity	Predator-prey interactions, competition	Infection spread
Emergent behaviour	Ideas, thoughts: Positive feedback loops (echo-chamber effect), negative feedback loops (divergent discourse)	Extinction, niches	(Un)healthy cells

Implications of the Research

The use of blogging and discussion forums as a means for student dialogue has the potential to impact teaching and learning in ways that we cannot clearly predict at this early stage of their organic development. As Marshall Mcluhan (1965) points out, to adopt a new technology without understanding the consequences is akin to "surgery carried out on the social body with complete disregard for antiseptics" (p. 62). Although it is early in the evolution of the Internet to provide clear recommendations for educators and fellow researchers (and trepidatious to provide supposed solutions to the many challenges posed by the dynamics of complex systems) some educationally pragmatic considerations are as follows.

Identity Formation and Issues of Privacy

In terms of media studies, students may engage in a form of identity formation when they participate dialogically in the blogosphere. The use of online narratives as a means of journaling creates some significant issues for privacy when young people begin to 'share' globally via blogs or discussion forums. Once student narratives are published online, they can be difficult to remove, as evidenced by Jeff Weise, the Red Lake School shooter, and his 'echoed' belief system within a Nazi discussion forum. Pedagogical practices that utilize the Internet as a medium to engage in the social construction of knowledge should place issues of safety, security and privacy at the forefront of the purposeful engagement. Educators need to be cognizant of how young people engage in presumably innocent aesthetic practices on the Internet and how easily they can become embedded in these activities.

Examining Notions of Diversity

In relation to an interest in curriculum, it will become increasingly necessary for educators and students to be more conscious of the *echo-chamber effect* while engaging educationally with the blogosphere or online discussion forums. In the new Alberta secondary social studies curriculum in particular, an emphasis is placed on "how diversity and differences are assets that enrich our lives. Students will have opportunities to value diversity, to recognize differences as positive attributes and to recognize the evolving nature of individual identities" (Alberta Education, 2005, p. 5).

Sunstein (2002) points to the need for chance events (teachable moments) surrounding discussions of diversity to be framed in our curricular activities when he says, “unanticipated encounters involving topics and points of view that people have not sought out and perhaps find quite irritating, are central to education, democracy, and even to freedom itself” (p. 34). As Shor (1992) suggests, “Critical teachers are willing to take the risk of introducing topical themes because student conversation and thought often do not include important issues in society (p. 558); and the examination of such topics is a fundamental responsibility of the teacher who legitimately serves as a more informed adult guide” (p. 558 and 582). As caring pedagogues, and in support of respectful and trusting classroom environments, it is our duty to provide opportunities for students to critically reflect on notions of diversity through those chance encounters with topics and individuals that can enrich learning. Perhaps such reflection can be achieved while inquiring into the range of ‘global’ perspectives resident on the World Wide Web.

Individuality versus Community

From a pedagogical perspective, the potential limits to intellectual diversity in an online environment are a starting point for an inquiry into how certain virtual community structures can be responsible for valorizing the group’s voice over that of an individual’s. As Baudrillard (1983) suggests, “something has changed, and the Faustian, Promethian (perhaps Oedipal) period of production and consumption gives way to the “proteinic” era of networks, to the narcissistic and protean era of connections, contact, contiguity, feedback and generalized interface that goes with the universe of communication” (p. 127). Through an awareness of a potential tyranny of community (virtual and otherwise), students may also begin to triangulate and shape their own understandings outside of the tautology of group polarization.

Promoting Diversity within Complex Systems

If the Internet is to be used as a space of educational practice, perhaps unplanned encounters with opposing perspectives is essential to the amplifying effects of positive feedback loops (i.e., echo-chambers). Therefore, in terms of participatory pedagogic practices, it becomes important to have students prepared to introduce (and respectfully sustain) divergent perspectives in online communities that might not ordinarily be prone to divergent views. To keep a system 'complex', it must be defined by diversity (in its agents and its ideas) and must continually be challenged or it will become a 'non-complex system', where "the agents are usually few…in number, they are often identical to each other and perfectly rational" (Centre for the Study of Complex Systems, 2007). Diversity is in fact a source of the system's intelligence, and defines its ability to keep 'learning'. Pedagogic activities such as intercultural collaborative inquiries on the Internet therefore become a new and interesting way to support critical thinking in cyberspace.

Considerations for Future Research

A specific question for further research consideration is:

- To what extent (if any) will the increasing personalization and semantic nature of the World Wide Web amplify the echo-chamber effect and create positive feedback loops online?

The Internet is currently known by the cultural meme of Web 2.0, which Musser & O'Reilly (2006) define as a "set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet - a more mature distinctive medium characterized by user participation, openness, and network effects" (p.4). However, an even more revolutionary consideration for educational researchers will be the Internet's future transformation into an extremely personalized cyberspace where filtering technologies such as RSS Feeds (Really Simple Syndication), and semantic search engines (with self-reinforcing algorithms) refine and tailor the online user experience so that people will tend to read, visualize, and hear about dimensions of the world to which they have a specific affinity (Web 3.0?). In essence, the contemporary World Wide Web is rapidly moving to what Berners-Lee et al. (2001) have described as the "Semantic Web". Tim Berners-Lee (1999), the chief architect of the World Wide Web, originally articulated his vision for the semantic web as follows:

> I have a dream for the Web [in which computers] become capable of analyzing all the data on the Web – the content, links, and transactions between people and computers. A 'Semantic Web', which should make this possible, has yet to emerge, but when it does, the day-to-day mechanisms of trade, bureaucracy and

> our daily lives will be handled by machines talking to machines. The 'intelligent agents' people have touted for ages will finally materialize.

The resulting divisiveness of the technological 'perfection' of the already emerging semantic web will be profound as individuals are increasingly only 'fed' the exact variety of information (e.g., specific political views, topical book themes, local environmental conditions) and sources (e.g., individual blogs, mainstream media online, ethnically-oriented webspaces) to which they digitally ascribe. In many ways this personalized digital state has already emerged through the highly accurate book recommendations from amazon.ca based on my purchasing habits, and with RSS-Really Simple Syndication that delivers (or 'feeds') information updates from select websites to a highly personalized web portal. This active screening (out) of content, facilitated by the emergent nature of the 'semantic web', is a state Nicholas Negroponte (Director of the Massachusetts Institute of Technology (MIT) Media Laboratory, and chairman of the global 'one laptop per child' initiative), has dubbed the "Daily Me" (Negroponte, 1995). As individuals (without difficulty) engage cyberspace with only that content that they want to see, hear and read about, then notions of diversity will be increasingly challenged, while freewill and personal choice will take on new (and obscured) meaning.

Conclusion

Individuals have always been able to seek out others who share our opinions, whilst ignoring perspectives that contradict our own. However, with the increasing personalization of the Internet, and access to an enormous assortment of socially-open online communities and conversations (e.g., 95+ million blogs), the potential exists for students (and teachers) to feed solely on their own sense of truth, and in doing so avoid tempering forces that challenge their own opinions. What then is the potential of the Internet, as a purposeful enhancement to pedagogical practice, if students only tend to seek information which echoes their own preconceived notions of the world? At the base of the findings in this paper is the echo chamber effect on the Internet that causes individuals to solidify their beliefs through 'positive feedback loops'. The extent to which the echo-chamber effect is occurring online in emerging socially open webspaces such as blogs continues to deserve more thoughtful study and attention, especially as it applies to educational research and activities involving the Internet.

Even in 1985, Neil Postman pointed to the challenges presented by echo-chambers in the foreword of his book *Amusing Ourselves to Death: Public Discourse in the Age of Showbusiness*: "Orwell feared those who would deprive us of information. Huxley feared those who would give us so much information that we would be reduced to passivity and egoism. Orwell feared that the truth would be concealed from us. Huxley feared the truth would be drowned in a sea of irrelevance" (Postman, 1985, Foreword). As thoughtful educators in an increasingly wired-world, it is essential that vigilance be paid to the many challenges the Internet presents as a (cyber)space for open dialogue, and approach the use of this globally interconnected network with a critical eye on the emerging phenomenon of the echo-chamber effect.

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CHAPTER 6

Awakening to Notions of Global Citizenship and Intercultural Collaborative Inquiry on the Internet

"International education exchange is the most significant current project designed to continue the process of humanizing mankind to the point, we would hope, that nations can learn to live in peace... We must try to expand the boundaries of human wisdom, empathy, and perception, and there is no way of doing that except through education."
~ J. William Fulbright (Cited in Armbruster, 1976, pp. 27-29)

Introduction

This paper discusses the findings from a focus group of beginning (preservice) social studies teachers at the University of Alberta, who reflect on the use of information and communication technologies (ICTs) as a means to explore the complex relationships and responsibilities associated with the notion of global citizenship. As part of the focus group, the group also shared their views on the value of employing the Internet and web-based social networks as a means by which to enhance their own pedagogic practice, intercultural experiences, and understanding of (local and global) citizenship.

The individual and collective responses of this group of senior undergraduate students both enlightens and challenges the assumptive ground upon which current practices within faculties of education (and indeed K-12 schooling) are bound. In doing so, the findings raise questions critical to a profession struggling to find its footing in an era increasingly defined by the omnipresent forces of globalization. It is an era where society is being (re)shaped and transformed by the many ways people communicate electronically, network socially via digital means, and study and work in online environments. Given the scope and implications of these changes for educational practice, teacher educators have new responsibilities to support preservice teachers as they anticipate and explore an era defined by globalization's nascent effects. In reflecting upon the participant responses, this paper argues for faculties of education to awaken the educational possibilities (and challenges) afforded by the Internet and ICT as a bridge of exchange for intercultural collaborative inquiry and as a means by which to introduce preservice teachers to new cultures, and perspectives for an imagined 'global citizenship' of the 21st century.

Theoretical Context

This research activity is situated within a theoretical framework of social constructivism, which recognizes that social processes are instrumental to the building of intra and interpersonal knowledge (Davis, 2004; Vygotsky, 1978). It is grounded in an understanding of perspective consciousness (Pike & Selby, 1988), which is the acknowledgement of our own unique viewpoints as a guide to the subtle influences of local and global issues emerging within the discourse. It is also framed in an awareness of intercultural communicative competence (Byram, 1997), which takes into account the principles and key characteristics of intercultural communication by outlining the skills, attitudes, knowledge, and critical awareness which have been observed to constitute intercultural competence (Bennett & Bennett, 2004).

Rationale for the Study

The intention of the focus group was to reconcile a deeper understanding of preservice social studies teachers' perspectives regarding global citizenship (as articulated within the newly revised Alberta social studies curriculum), and the associated complexities of engaging ICT and the Internet as a means of exploring this notion. This study was also conducted given the dearth of research in the area of online intercultural collaborative inquiry in the field of education. Existing research has explored the implications of face-to-face intercultural exchanges and the positive results (i.e., appreciation of diversity) of these exchanges (Hammer, Bennett, & Wiseman, 2003); however, a question remains as to whether these promising outcomes can be extended or enhanced for preservice teachers via digital communication and collaboration. The literature is especially lacking about online collaborations between teachers from different cultures (Davis & Cho, 2005; Ferdig & Dawson, 2005) and how these cultures are expressed and shared on the Internet where the implicit value systems (e.g., immediacy, transparency and openness) may impact the cross-cultural exchange (Macfadyen, Roche & Doff, 2004).

Traditionally, intercultural exchange has been considered a face-to-face activity, ideally located in other countries. Indeed, through international travel, students can gain a deeper appreciation of the cultural diversity resident in the world, especially if they have opportunities to live outside of their own cultural norms over an extended period of time. However, this is not often a practical consideration for undergraduate students at large, as time constraints, financial commitments, cost of air travel, and familial responsibilities (among other challenges) make international education exchanges an infrequent occurrence in faculties of education. To foster effective intercultural communication, appreciation of diversity, and critical thinking skills in undergraduate students, other means of communication and exchange should be explored that employ the strengths of the Internet as a medium for collaborative inquiry in a global era.

This study evokes the voices of preservice teachers within specific Alberta K-12 curriculum and embeds these voices within a call for teacher education program reforms. In bringing forward the voices of preservice teachers, many who have fundamentally different experiences with ICT in the home and school context than the current demographic revealed in the professoriate, a unique and valuable perspective was unearthed and emphasized. As Rudduck et al. (2003) would advocate, there are many 'educational benefits' to engaging the student voice in learning and teaching.

Research Method

This research was exploratory in nature, and best addressed using a mixed methods approach. The particular method employed was to create a hybridized focus group approach using a Technology of Participation (ToP) method derived from research out of the Institute for Cultural Affairs (2007). This focus group was a hybridization due to its assemblage across three phases: an introductory focused conversation (Phase I), ToP method (Phase II), and an online survey to enhance the discourse findings and data analysis (Phase III).

The ToP approach to group data gathering is based on a general focus group method but characterized by a distinct process meant to explicate internal cognitive reflection (perception, response, judgement and decision) into the emergent flow of the collective insights. As Parker and Tritter (2006) suggest, a focus group is a valuable qualitative research method because it commits to "capturing group interaction and harnessing the dynamics involved to prompt fuller and deeper discussion and the triggering of new ideas" (p. 29). The conversational nature of the activities focuses on particular questions that lead to deeper insights into individual and collective perceptions.

This hybrid approach is novel to academic qualitative research; therefore the method and analysis have been articulated in detail within this paper. The particular strengths of this hybrid focus group approach, over other conventional focus group methods, is that it adheres to a structured method that recognizes all contributions, establishes a process to help the group handle a large amount of data in a very short period of time, pools participant data into larger, more information rich patterns, and allows the researcher to successfully attend to polarization, conflict and diversity of response. In this method, participants are not meant to be confounded by issues and ideas with which they may not be particularly familiar or perhaps have not reflected on prior to the focus group activity.

The ToP method in particular allows participants to quickly come to grips with their own unique insights by participating in a process of individual reflection, small group discussion, and large group sharing and data organization. As Dewey observed, "Information is an undigested burden unless it is understood…An understanding, comprehension, means that the various parts of the information acquired are grasped in their relations to one another, - a result that is attained only when acquisition is accompanied by constant reflection upon the meaning of what is studied" (Dewey, 1933). At each stage of the focus group process, data were gathered for later analysis and reflection by the researcher and participants.

Specific examples of introductory questions posed by the researcher can be found in this paper under the 'Research Questions' section. The processes, and the skills of the researcher, are expected to create an environment that is sensitive to censoring, group conformity, and/or dominance by one or more members of the focus group. This process allows for both the individual expression of data and the formation of a group consensus on the emergent clustering themes. With proper execution, this process has routinely provided enriched and descriptive qualitative data sets. As the researcher, I have a wide range of experiences using the ToP method, acquired through extensive course work and training over two years (2002/2003) through the Institute for Cultural Affairs (2007), and via subsequent implementation of the method with several public consultations while a senior manager with the Government of Alberta (Alberta Education).

The process of the ToP method, as enacted within this focus group was as follows:

Brainstorming

Individual Brainstorming: Each participant in this study was asked to individually generate four or five responses to the focus group question. Their responses were recorded on 8½ × 11 inch cards. Participants were asked to clearly write their ideas in large letters, with one descriptive idea per card, identifying specific and concrete concepts, and using a total of 3-5 words. Participants were asked not to repeat ideas on different cards in order to preserve the diversity of ideas each individual would generate.

Small Group Brainstorming: Following the individual brainstorming stage, teams of three individuals gathered to share each of their ideas, as expressed on the cards (data), and then as a group identify a maximum of two ideas that they collectively felt 'most passionate about' or deemed were 'most important' to highlight.

Large Group Sharing: Each group of three then took turns reading aloud their two 'most important' ideas, and posting them randomly at the front of the room; an area of public exposure to the larger group. At this time members of the larger group, or the researcher, had an opportunity to ask questions of clarification regarding the ideas being presented. As noted by Denzin and Lincoln (1994), most member response checking should be done in real time while a focus group is being conducted.

Clustering

Clustering: The next stage of this process asked the larger group to develop columns where similar ideas could be clustered from the random placement of cards. Two similar ideas were first pooled into a column and then assigned a symbol, as opposed to a 'title', for the shared concept. This process was repeated with more cards, and five new columns were generated until the group decided there were no 'new' shared concepts. Finally, additional cards were added to each existing column from the random cluster. All remaining cards (data) were then added to the existing column structures. In this final step, one new column emerged for the complete data set.

Themes

Articulating Themes: The longest column was the first discussed by the group. Initially each card in the column was read aloud, and the participants assisted with the following activities: identifying the key words, general theme of the column, and how the responses would help to answer the focus question. Participants then worked in groups of three to propose titles for the column and, through a process of discussion, consensus on the general theme of the column was reached. This was repeated for the remaining columns.

Validating Themes: The group looked at what they had created and the titles were read aloud, pointing to how each of the columns answered the focus question. At this point, the group discussed disagreements with any of the themes or descriptive language.

Reflection

Finally, participants were asked how the process itself had impacted their thinking on the subject under discussion. As one participant comments:

> *I think the focus group model has been invaluable for me. I can see how focus groups can be used in the classroom to engage students, and to show them that they have valuable wisdom to impart. Even in teaching the globalization curriculum, a focus group model can be a way of determining solutions for global issues! Thanks!*

Ethics

All participants of this study were informed, both verbally and in writing, as to the voluntary nature of the focus group activity and their right to opt-out of the research. In protecting the human subjects, every effort has been made to maintain the privacy of the individuals in attendance. Permission for this study was obtained and approved by the University of Alberta's TriCouncil Research Ethics Board.

Research Questions

Phase I – Focused Conversation Questions

This focus group encompassed three phases of data gathering, with each phase focusing on a unique set of questions. The first phase was concerned with an introductory 'focused' conversation to ease the group into the activity and explore the perceived challenges and opportunities afforded by the Internet and ICT as a means to explore the notion of global citizenship (as articulated in the revised Alberta social studies curriculum).

Q1: *What are all of the ways that the Internet and ICTs could be used to assist Social Studies 10, 20 and 30 students as they explore responsibilities associated with local and global citizenship, and formulate individual responses to emergent issues related to globalization?*

Q2: *Which of these ideas do you find to be most exciting or disturbing?*

Q3: *What are some of the benefits and challenges to the ideas previously expressed?*

Q4: *Which of these approaches might you try when you have your own classroom?*

Phase II – Primary Focus Group Question

The second phase of the activity was the most substantive component and working through the Technology of Participation (ToP) method was done to generate data on the participants' thoughts, perspectives and beliefs about the explicit benefits of using Internet based technologies to connect with people from around the world during their experience as undergraduates in the faculty of education.

If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?

Phase III – Online Survey Questions

The third phase entailed the completion of an online survey (see Appendix B) that provided a mix of qualitative and quantitative data to enrich the evaluation and analysis of the findings of the Phase I and II discourse. This survey was held immediately following Phase II in a networked lab. The proximity of this online survey to the phase I and II activity was important, because reconvening a focus group at a later date (virtually or otherwise) is often impractical and, even when it can be done, the dynamics are likely not the same. Given the online nature of the survey, it was possible for the immediate addition of questions the researcher wanted included following the Phase I and II conversations. In an attention to corroborating the research findings, the audio recording of the group discourse were transcribed, along with the collection of individual brainstorming sheets, and responses cards submitted in the Phase II component.

As is articulated later in the paper, the Phase I and II discussions progressed with many intriguing ideas conceived by the individuals that then flowed into the small and large group insights. Given the momentum of these shared insights, an unanticipated consequence was the time and effort participants allocated to responding to the online survey questions, where many individual responses were documented in greater detail.

Appendix B provides access to the question set resident in the online survey. The general survey categories, to which participants responded, included the following:

- Demographic Profile: (Age, Gender, Program, & Range of Intercultural Experiences)
- Attributes of (Inter)Cultural Communicative Competency (Self Rating)
- Digital Literacy: (Origins, Frequency of Use, Confidence, Importance to Teaching)
- Global Citizenship: (Definition, Importance & Approach)
- Intercultural Collaborative Inquiry on the Internet (Prior Considerations & Feasibility)
- Other Comments

Participant Profile and Group Dynamic

A total of 15 secondary social studies preservice teachers self-selected to participate in this focus group in February 2007. The representative demographic profile of the participants was 9 men and 6 women, ranging in age from 18-34 years. The group can also be distinguished in terms of age, with 53% of the participants between the ages 18-24, and 47% aged 25-34 years. A majority of the participants (73%) were in the final stages of their program known as the 'Advanced Placement Term' (APT), thus suggesting they would be eligible to teach unsupervised in the Alberta system at the end of the Spring 2007 academic term. The remaining 27% were in their 'Initial Placement Term' (IPT), indicating that they would likely complete their studies within one year. Generally, the profile of this focus group was equally divided in terms of gender and age profile, with the majority on the verge of graduating with their Bachelor's Degree in Education.

When queried as to their participation in any significant intercultural or international experiences outside of the Faculty of Education (e.g., living in another culture, traveling extensively overseas, working for several months within a cultural group different than their own), over half the participants suggested they were involved in such experiences. The activities cited ranged from international travel to South East Asia, Europe, Central and South America, and Africa, to several months spent living in Pakistan, Ireland, and Costa Rica. Given that these are future social studies teachers, one could speculate that they would already bring an inherent curiosity and interest to cultural studies and globalization, along with habits of mind that are more open to the exploration of other world views.

Group dynamics are an important characteristic of focus group research. In this particular session, only three or four participants had met in their university courses prior to the activity. In terms of group dynamics, the large group was able to form common clusters of data relatively efficiently, while the small group interaction was observed to be both congenial and professional, and allowed for various divergent views to be articulated and discussed. Comments in the final section of the online survey corroborated these observations. The Phase I focused conversation allowed for a 'settling in' period where individuals had an opportunity to both get to know one another, and begin exploring (independently and collectively) the research questions. As noted in the research method, the ToP approach, and researcher, should be attuned to censoring, group conformity, and/or dominance by one or more members of the group. The focus group discussions were not dominated by any one individual participant voice. Based on an analysis of the transcripts and active movement in the room, it was observed that the members of this particular focus group were confident and respectful in their discussions of contentious issues around the homogenization of culture, challenges of ICT, and the possibilities of utilizing the Internet for intercultural collaborations.

Analysis

The interpretations and analysis of the data have been recursive elaborations that are at once reflective, subjective, and creative in nature (Davis & Sumara, 2005; Denzin & Lincoln, 2003). In analyzing the content of the focus group discussions, a process was enacted to identify, code, and categorize the primary patterns in the data (Patton, 1990). "The qualitative analyst's effort at uncovering patterns, themes, and categories is a creative process that requires making carefully considered judgments about what is really significant and meaningful in the data" (Patton, 1990, p. 406). The categories created as the group clustered the data became the basis for the organization and conceptualization of this data. While in the further analysis, cognizance was paid to the categories and theme formation, recognizing that they are "bound up on the one hand with the bits of data to which it is assigned, and on the other hand with the ideas it expresses" (Dey, 1993, p. 102). The category formation and identification of themes therefore became crucial elements in the process of analysis. The meaning of the response items were interwoven both during the focus group activity and as the themes and sub-themes emerged in the subsequent analysis. The variations and essence of the focus group emerged slowly over time (Giorgi & Giorgi 2003; Van Manen, 1990).

There are many complexities to understanding a group's individual and collective conceptions, perceptions and interpretations of a topic under discussion. The focused conversation and ToP method assisted by intimately involving the participants and the group in the formulation of clear and meaningful responses. An important issue within the method is for the group itself to articulate whether an issue constitutes a theme for the group or merely a strongly held viewpoint of one or more of the participants. The Phase II process of the focus group paid close attention to this particular issue and in doing so moved between the "logical construction and the actual data in a search for meaningful patterns" (Patton, 1990, p. 411).

As a means of reflective engagement with the data, the following four steps were taken:
Step 1: The text from Phase I, II and III was read through in its entirety to acquire a general picture of the individual and collective comments. The audio of the focus group was transcribed and read for clarification.

Note: Individual response items were drawn from all three phases of the data gathering, with group themes emerging during the Phase II discourse. In terms of the Phase II data, the process involved the group itself participating in shaping the initial themes and clustering of responses. This final component of Phase II activity visualizes and highlights many of the dominant issues and common themes presented during the large and small group discussions.

Step 2: The text from Phase I-III was then coded, clustered and linked (Miles and Huberman, 1994) to further organize the data into shared categories, with a number of response items assigned to different areas of shared meaning. This process allowed for an identification of shared concepts and outstanding or anomalous responses.

Step 3: In this final step, the essence of the focus group discussion emerged. Each category was transformed into themes and sub-themes through three iterative and reflective steps, with the six general themes increasingly condensed and shaped into three themes and nine sub-themes. The nine sub-themes were then transformed into more theoretical descriptions based on each response category. The original participant response data remained tied to each of the themes and sub-themes in a visual format. After three revisions to the data, no new variations occurred and the focus group responses were therefore deemed to be saturated based on what emerged from Step 1. Finally, to illustrate the key themes and findings, quotations were identified from the online survey comments and session transcriptions.

In summary, the themes emerged as a natural working of the students' own insights and perspectives. Students began by individually brainstorming their own ideas, and writing them upon index cards. As the group discussed and outlined their work through a small and large group collaborative process, a unified set of themes emerged. Further analysis of the student responses helped to refine the participant generated data into theoretically contextualized themes and subthemes for this manuscript. In continuing to fulfil the member check functions, the finished paper was also sent to each participant, after which no edits were further requested by the group.

This overall process would be extremely effective for engaging students in an inquiry based stance to social studies curriculum, and in general dialogue that supports students as they conceptualize their own meta-analysis. Therefore, in consideration of the preservice teachers' pedagogic interests, a 'lesson plan' for this focus group was distributed at the end of the session, along with two short articles on focused conversations and inquiry activities for the social studies classroom.

Research Limitations

The objective of this research initiative was exploratory in nature and therefore best addressed qualitatively in a descriptive versus predictive manner. This focus group research provides insight into the range of opinions held within a specific population of undergraduate social studies teachers, rather than the weights of the opinions held by the entire population of undergraduates, as would be measured in a quantitative study. Although data were corroborated and the findings of this report were consistently validated, there are clear limitations to this work. While helpful for setting general directions and opening up a discussion of considerations for teacher education programs, specific findings that emerged may not be applicable in other contexts.

Findings from the Focus Group

The research findings have been divided into five main sections to provide structure to the inter-discursive nature of the research, and as a general frame of reference for the reader.

Section I: *Conceptualizing Global Citizenship*
Section II: *Global Citizenship and the Information Society*
Section III: *Challenges to Infusing ICT into Teaching and Learning*
Section IV: *Digital Literacy and Preservice Teachers*
Section V: *Intercultural Collaborative Inquiry on the Internet*

Section I: Conceptualizing Global Citizenship

During the first phase of the focus group, participants were asked to consider technological approaches with ICT that could assist social studies students in the secondary setting (grades 10 -12) as they explored responsibilities associated with local and global citizenship and emergent issues related to globalization. A rationale for such a question lies in the revisions to the Alberta social studies curriculum, where the notion of global citizenship and ICT outcomes have been infused together throughout the new provincial program of study.

As an initiation into this conversation, particular attention was drawn to the language within the new kindergarten to grade 12 (K-12) Alberta social studies program of study, and its attempts to reconceptualize citizenship education for a global era. In particular, the secondary education (grades 10-12) social studies curriculum (Alberta Education, 2005), encourages students to attain values and attitudes that "accept political, social & environmental responsibilities associated with global citizenship; exhibit a global consciousness with respect to the human condition; develop strategies to demonstrate active, responsible global citizenship" (p. 21). While in the same breath, this curriculum explicitly promotes a digital literacy with ICT, asking students to, "use current, reliable information sources from around the world" (p. 31); "apply information technologies for context (situation, audience and purpose) to extend and communicate understanding of complex issues" (p. 19); and to "analyze the validity of various points of view in media messages" (p. 33). These ICT outcomes are not intended to stand alone, but rather to be infused as a curriculum within a curriculum, thus supporting the ability of students to understand, analyze, and deconstruct meaning using ICTs, and in turn be aware of how media is produced, marketed and accessed in a digital age.

From this social studies program description it seems self-evident that, if a global collaborative or communicative event is to be supported within the Alberta education system, social studies would be an ideal discipline for students to take part in "different paradigmatic views on social life and the differing value assumptions of each" (Apple, 1971, p. 113). In learning about global citizenship in this complex curriculum, students will likely explore many issues ranging from the environmental challenges posed by global climate change, water consumption, overpopulation, urbanization and pollution, to the deeply ethical and moral implications associated with the transnational flow of people, ideas, technology and culture (i.e., globalization). Although a direction has been vaguely set forth in the Alberta social studies curriculum for a 'global citizenship' in an information society, a larger body of policy makers and educators have not reached a consensus as to what this form of citizenship actually entails (Westheimer & Kahne, 2004), nor a definitive agreement on the nature of participatory action for a global citizen.

For preservice teachers, curriculum is a primary consideration in their studies and preparation for life in the classroom. When the focus group participants were asked how important the notion of global citizenship was to their teaching of the social studies curriculum, 87% stated that it was 'very important' or 'important'. To further this "complicated conversation" (Pinar et al. 1995, p. 848), these future educators shared their unique understandings of this notion. The collective responses of the group imagined a 'global citizen' as someone who is:

- concerned and interested in the world/planet and its people;
- empathic and able to recognize that there are many issues that are larger than the individual self interest, and that sometimes decisions will need to be made in terms of an accountability to the global community;
- aware that individual and collective actions have global ramifications (environmentally, culturally, politically, economically, and spiritually);
- aware of one's relative place in the world;
- open, knowledgeable, and aware of other cultures;
- prepared to examine issues from multiple perspectives;
- able to recognize bias (one's own, others, the media's); and
- willing to speak up and take action to rectify injustices occurring in respective local, national, and global communities.

The issue these responses bring up is how the participants define citizenship as a 'conceptual idea' versus a defined 'legal position'. Their conceptualization is perhaps a purposefully and usefully ambiguous one, in opposition to a more rigorously defined legal interpretation with all of its vestiges of power and nationalistic abstractions.

As a conceptual notion, the focus group participants' collective imagining articulates a clear sense of agency and boldly assumes that 'we', as citizens, should be willing to act globally and locally and, in doing so, confront the complex problems facing humanity. It also assumes that different perspectives (and their uniqueness) can be brought into an individual's consciousness, which will inform sound decisions for the betterment of the planet and humankind. These qualities collectively embody a generally optimistic vision of citizenship that moves beyond the more traditional nationalistic (legal) descriptions, to one requiring a global empathy, the courage to challenge mass media, a passion for social justice, peace education, and environmental stewardship at the global level.

A definition of global citizenship that emphasizes both social justice and environmental stewardship is located in one of the earliest iterations of the term put forward by Oxfam International. This definition states that a global citizen "is outraged by social injustice…is willing to act to make the world a more sustainable place" (Oxfam, 1997). If teacher education programs are to live up to the formidable educational challenges of supporting students as they move towards a broad 'ethos' of global citizenship, and gain the skills to be life-long learners and global social activists, then the complex and inter-related nature of social and ecological systems must indeed be a part of their educational experiences as undergraduates.

In addition to the actual reconceptualization of global citizenship, reference to participatory action can be read within the following focus group comment:

> *A global citizen must also have a concern for their world and the people in it, whether they be next door or around the world...be concerned also about the future of the world and its people...be willing to seek information about places in the world both close to home and far away, and be willing to speak up and take action when and where they can to rectify injustices that they see occurring.*

While other statements made by the participants suggested a certain apprehension exists around what participatory action entails:

> *...just being informed isnt enough to be an "active" (global) citizen. You have to realize what types of things you can do to participate or help in the world. These are things I wish were offered in the curriculum. I would love to have a better idea of what kinds of things I can do to make the world a better place.*

At the periphery of this hopeful discourse are concerns around patterns of behaviour and curricular activities that would ask students to focus on the global instead of local issues. Such critiques view globalization as a solidifying and homogenizing force, capable of dominating the world order, and undermining any potential for individuals to collectively form around a global identity. Such commentary, at the extreme, places global imperatives as prima facie evidence that agency resides only in a small group of powerful elite who ensure that resistance to change in the current conditions of power and authority are futile.

As Laxer (2005) would argue, "it is naive to think that a united global civil-society of six billion people can act in concert to control the power of corporations or capital in imperial America…ordinary people cannot be organized and coordinated globally" (p. 351). Couched in this argument is an understanding of a neoliberal agenda (Smith, 2003; Kachur & Harrison, 1999) presumed to be at work harnessing education (and the notion of global citizenship) for the purposes of privatizing the public sphere and marketing corporate goods. Perhaps a warranted concern given Microsoft (2006), Hewlett Packard (2006), and Intel's (2005) recently released 'global citizenship reports' that co-opt the term in order to highlight their worldwide operations and corporate facilities. Participant comments that articulate this particular tension are as follows:

> *I think that a globalized citizen is a created notion to keep certain sections of society in power. That is to say, that we want globalized citizens who are weaker, less fortunate, and in dire situations. These sections in power do this to not only keep themseleves in power, but to also show their own communites that there are others, less fortunate, and weaker they us. This sense of a globalized citizen is rather created to keep thier eyes on problems that are happening in far off places, rather then the ones that are going on in their neighbourhood.*

> *A 'global citizen' seems to be a paradox. Because, on one hand it includes everyone, but does it really? Could global citizenship be the result of a ideological disease that spreads across the world killing off other cultures (much like the europeans colonies then american corporations)? Althought the intentions may seem admirable and romantic, could the means (the pc) to create a global citizenship be a technological pirate?*

Unearthing the origins of these comments requires a reflection on how K-12 schooling can shape citizenship education. In North American society, formal schooling has traditionally been positioned as having the primary responsibilities for teaching students about citizenship. As Richardson et al. (2003) indicate, it is within the discipline of social studies where the exclusive responsibility for the teaching of citizenship and identity resides.

Much has been written about citizenship education (Kymlicka & Norman, 2000; 1995) and its long tradition hailing back to the biblical portrayal of citizenship as the "rights and privileges of a citizen in distinction from a foreigner" (Easton's Bible Dictionary, 1897, Luke 15:15; 19:14; Acts 21:39). In North America, a contemporary curricular understanding of citizenship, originates in the 19th century with a 'Committee of Ten' representatives from leading colleges (e.g., Harvard College) and secondary schools, producing a report on secondary school studies (National Education Association, 1894). This committee work suggested that a social studies curriculum should lead to "an appreciation of (one's) duties as a citizen, and to an intelligent, tolerant patriotism" (p. 74). According to the report of the 'Committee on Social Studies', over a decade later, the teaching of history should, "aim to develop a vivid conception of…a strong and intelligent patriotism" (Jones, 1913, p. 39).

The intent of this 19th century social studies curriculum was unambiguously to reinforce a strong relationship between citizenship and national identity. Many Canadian students continue to understand citizenship through an exploration of national issues leading them to develop strong ties with the nation state. In a research project comparing policy and programmes in citizenship education across several international jurisdictions, Sears & Hughes (2006) contend that "Canadian jurisdictions have taken an approach to developing civic knowledge, skills and dispositions that is more consistent with indoctrination than education" (p. 15). As Walter Feinberg (1998) posits, "citizenship education is a way to stabilize a normative conception of a nation and its instruments of governing, the state. It does this by developing appropriate interpretations, competencies, and loyalties…that justify, enable, protect and defend their partiality toward one another" (p. 203).

A challenge must be put forward to any (social studies) curricular practice that emphasizes a national citizenship in absentia of an understanding to the current global imperatives (i.e. global climate change) facing local, national and international communities. As Huebner (1975) advised more than a quarter of a century ago: "curricular language must be continually questioned, its effectiveness challenged, its inconsistencies pointed out, its flaws exposed, and its presume beauty denied" (p. 218). The vision of global citizenship imagined by the preservice social studies teachers in this focus group, clearly calls into question the normative conceptions of citizenship education found throughout formal schooling contexts, and positions it in such a way that it can no longer be defined by national borders.

Several citizenship education research scholars would suggest (in their own particular ways) that global perspectives are indeed a part of national identity; where students can come to see themselves as members of many communities, and in doing so find a balance between their local, national and international responsibilities (Laxer, 2006; Richardson et al., 2003; Parekh, 2003; Osborne et al., 1999). A transformation of citizenship education from one emphasizing national imperatives to one interweaving global concerns will likely involve many challenging conversations. As suggested by Anderson (1991), these conversations may raise tensions akin to those found in the historical emergence of nationalism during the age of city-states. In our current digitally connected and global era, questions around what it means to be patriotic, and how citizens form their civic concerns both online and offline (and the merging realities in between), will create a ripe space for academic debate.

Within the curriculum that is to be mediated in a school context, and the interface between this curriculum and life issues, educators have opportunities to provide meaningful learning opportunities for students in a global era. As Stewart (2005) suggests, there is a need for more systematic research on "the effectiveness of different approaches to global education …as educators strive to give their students new international skills for a new Global Age" (p. 232).

Section II –Global Citizenship and the Information Society

Section two of this manuscript addresses how preservice teachers in this focus group envisioned taking up the task of teaching global citizenship in a space where students enter K-12 classrooms and universities with a particular digital literacy, ICT outcomes are embedded in curricular practice, and technology is found to be pervasive in society. The participants put forward a range of technology approaches when asked specifically about how the Internet and ICTs could be used to assist Social Studies 10, 20 and 30 students as they explore responsibilities associated with local and global citizenship, and formulate individual responses to emergent issues related to globalization. Each is listed below, and rank ordered based on the group's preferred approaches:

1. *Online Newspapers* (eNewspapers)
2. *Digital Storytelling* (e.g., sharing short personal narratives with audio, sound, and video)
3. *Email Exchanges*
4. *Blogging* – Individual and class oriented online journalling
5. *Social action online* (e.g., supporting non-governmental organizations via the Internet)
6. *Videoconference Exchanges*
7. *Podcasting* (e.g., digital audio recordings for distribution to portable media players)

These approaches include a variety of time dependent (synchronous) and non-time dependent (asynchronous) technologies. They were also discussed by the group as activities to be mediated on the Internet, with the exception of digital storytelling, which was at times portrayed as an 'offline' project requiring a digital camera and computer, but not an Internet connection. These various approaches were also considered by the group as blended educational activities. For example, in terms of promoting social action online, 73% of the participants noted they would consider using blogs in conjunction with podcasting or wikis as a means to express perspectives on local, national and global issues (e.g., social justice).

The variety of technologies suggested by the group illustrates the participants' attention to the many differentiated instructional possibilities currently afforded by ICT and Internet-based technologies - textual (blogging and email), audio (podcasting), and video (digital storytelling and videoconferencing). The different pedagogical approaches put forward by the group can be divided into three collaborative activity structures as outlined by Judi Harris (1998): *interpersonal exchanges* (activities where individuals/groups communicate electronically with other individuals/groups); *information collection and analysis* (students collect, compile, and compare information); and *problem solving* (activities that promote critical thinking, collaboration, and problem-based learning).

The majority of the examples provided by the group were oriented around problem-solving activity structures. Research on enhancing learning through the use of ICT in schools suggests that problem-solving (or inquiry-based) activities enhance learning by "creating more dynamic interaction between students and teachers, increasing collaboration and team work…stimulating creativity in both students and teachers, and helping students to control and monitor their own learning" (OECD, 2005, p. 9).

Section III –Challenges to Infusing ICT into Teaching and Learning

Interestingly, the conversation during the first phase of the focus group was not dominated by discussions of the opportunities the technologies presented, but instead self-oriented around the challenges ICT posed as an enhancement to teaching and learning. As Carey (1995) reports, focus groups quite often open space for negative comments to be freely voiced, as opposed to a survey or questionnaire where fairly neutral evaluations are reported. The following issues were identified by the group as key challenges associated with infusing ICT into teaching and learning:

- Lack of equitable access to ICT resources in (rural) Alberta;
- Recognition of a global 'digital' divide to ICT resources;
- Concerns over issues of privacy, ethics, and safety (e.g., cyberbullying);
- Instant and immediate nature of ICT and electronic communication; and
- Infoglut on the Internet (i.e., information overload from too much choice online).

In particular, the discussion around equitable access to ICT resources in Alberta, and globally, acknowledges the stark challenges schools face as they consider integrating ICT effectively as a curricular activity associated with global citizenship education. As Hargreaves (2003) points out, educators are currently living on a precipice looking out at the promise of a knowledge society (in which there exits a sophisticated infrastructure supporting ICT) while being struck by the harsh and complex realities of under-funded schools. As two focus group participant's state:

> *Funding is going down, and the lack of computers and resources deters me from intergrating technology in to globalization issues.*
>
> *Often you have to fight for time and space in the one or two computer labs that exist in a school. As a teacher, I will have access to the labs, and will be able to research to and print off resources for my students to examine and analyze, but I would love for them to be able to do that themselves and actively engage in daily forms of communication via the internet.*

In pointing to a global 'digital' divide to ICT resources, one participant put forward an enlightened appreciation of a contemporary concern:

> *One could only communicate with cultures that are connected to the internet. These cultures are of the developed world. Therefore, many of the same bias and perspectives will permeate through out each culture. I think that too many advocates for internet use as a teaching tool are under the premise that the internet connects all peoples.*

What this comment does not take into account is the emergent and ever-evolving nature of the Internet and how the online user population is nested within a complex (cyber)space where the populations of 'developing' countries are rapidly shifting the overall demographic topology of the network. For example, over the past four years the overall Internet population in the Middle East, Asia, Latin America and Africa has dwarfed the percentage share of North Americans online. In the year 2007, Asia represents 37.2% of the overall Internet population of 1.2 billion users, while North America has seen a steady decline in overall percentage share to its current 19.8% portion of the global Internet population (Internet World Statistics, 2007a). As a general comparison between global regions, one can see China currently has 162 million unique users online, in comparison to Canada's total online population of 22 million (Internet World Statistics, 2007b). More striking is the consideration that over three quarters of Canadians have Internet access, while in China only ten percent of the population is currently penetrating the Internet.

Research out of the Pew Internet and American Life Project (2007) corroborates these findings and the emergent nature of online populations. However, it demarcates the global digital divide not as an ethnic concern (as noted by the participants' comment above), but instead as among the urban and rural centres. In this research, it is noted that 83% of the Internet users in China hail from urban centres (Pew Internet and American Life Project, 2007) where Internet café's and wireless access points have proliferated. With urban centres growing, and rural spaces diminishing on a global scale, perhaps the online digital divide should be framed as one concerning the city and countryside, versus conceptualizing it as a purely ethnic divide. The complexities abound when further exposing the profile of individuals accessing the Internet in global urban centres, and find it marked by a generational divide, with youth able to 'read and write' online, and a less digitally literate generation lacking such fluency.

Many preservice teachers in this focus group may not have experienced a K-12 education system in which a technology-rich learning environment engaged them in an inquiry stance. In their study of preservice teachers in the Alberta context, Clifford et al. (2004a) state that, given a lack of experience in technology-rich learning environments, preservice teachers "reported a generally dismal picture of their attempts to integrate technology in their student teaching…and it confirms findings from the literature that effective technology integration remains problematic in many classrooms" (p. 3). A comment from this focus group reinforces these findings, and speaks to an education system that still clearly struggles to reconcile learning and technology as a way to enhance pedagogical practice.

> *I have not thought about the role of the internet very much, because my own secondary education took place prior to the spread of the internet, and I have never seen it's use modelled in the classroom as a student.*

A study by Lewis & Finders (2002), which contrasted preservice teachers' views of technology with those of the children they were teaching, found that preservice teachers were hesitant to allow technology into their classrooms due in part to their own insecurities related to a loss of classroom control and relinquishment of power. This concern is well documented by Hagood et al. (2004) who suggest that, "Without the knowledge of current literacies that are a part of adolescents' lives, they [preservice teachers'] refer back to literacies in which they feel competent and over which they have control-traditional forms of reading and writing" (pp. 77-78). Teacher education programs need to alleviate these concerns by modeling effective pedagogical practices for the integration of ICT into teaching and learning, and in doing so alleviate a generational anxiety over a new 'digital' literacy; an imperative for faculties of education interested in supporting effective pedagogies that will inhabit future K-12 classrooms.

Some valuable insight into how Canadian educators are not utilizing the Internet to support the concept of digital literacy for youth can be found in a three-year longitudinal study out of the University of Alberta by Gibson and Oberg (2004). In this study, the researchers probed teachers' visions and the realities of Internet use within the curriculum and Canadian schools: "The realities of Internet use, however, were quite different from the visions. Its potential as an innovative learning tool for students and for teachers was largely unrealised. Few respondents reported using the collaboration, creation, and dissemination capabilities of the Internet" (Gibson and Oberg, 2004, p. 569). This study also highlights the lack of activity around global collaborations, "A purpose less frequently articulated…was to provide different cultural and learning experiences through online communication with people around the world" (Gibson and Oberg, 2004, p. 573). Consequently, if we plan to successfully encourage the notion of global citizenship, alongside ICT activities, we should consider looking at progressive pedagogical approaches, such as online global collaborations, to be embedded across programs in faculties of education.

In relation to the appropriate pedagogical and learning activities necessary to infuse technology into the learning process, some participants noted their lack of understanding as to what these activities might looks like. Haughey (2002) addresses the issue of a suitable pedagogical approach when she declares, "research in many parts of Canada has demonstrated the utility of a more active, problem-solving, inquiry approach. Using the technology to make visible knowledge-building, assumptions, queries and new propositions, makes it easier for students to consider the contributions of many and to be creative in their response. It is not the technology that is enhancing the learning; rather it [is] the strategies the teacher is using which become possible through the new technologies" (p. 15). Statistics Canada (2004) reinforces these findings citing that professional growth opportunities around learning and technology continue to present an extensive challenge in 40% of Canadian schools where educators are believed to be more skilled at using ICT for administrative purposes rather than for engaging students in learning (p. 26).

Section IV –Digital Literacy and Preservice Teachers

To better understand the participants' responses, an examination of their digital literacy and the context in which it is emerging was warranted. Young Canadians are charter members of a generation that has grown up with the Internet and new media. Don Tapscott (1998) describes this cohort as the 'Net' generation (also known as the N-geners, echo-boomers, millennials, or generation Y) and suggests that given their experiences with (and affinity for) digital media, they will have a profound impact on our society in the coming years. Written indelibly in the demographics of North America society is the fact that youth between the ages of 12-25 currently make up one of the largest dimensions of our society, and number over 80 million (Tapscott, 1998; Foot, 1996). This is the largest generational cohort in North America since the 1960s, and those members of this group who enter the profession of teaching, will (re)shape the future of K-12 education in light of their interests in digital technologies.

The Media Awareness Network's (2005) research on young Canadians between the ages of 12-17 indicates the Internet and digital technologies have become a transparent part of young people's lives. Their most recent study entitled *Young Canadians in a Wired World – Phase II* suggests that to young Canadians the Internet and digital technologies are not new inventions, but "part of their life's landscape" and "integrated into their sense of place and time" (p. 8). As Sherry Turkle (2004) suggests, "What this generation of schoolchildren, K–12, shares globally is mediated locally, but exposure to the evocative power of digital technology—the way it acts on cognition and affect—is one of the generation's defining traits" (p. 97). Much similar to the way we utilize electricity in our lives, the Internet is pervading our home and work environments and, in doing so, becoming present but absent.

As young Canadians navigate, create, listen, view and communicate within a digital medium, educators' traditional conceptualization of literacy will begin to expand beyond that of 'reading' and 'writing'. This expanded literacy has been labeled a digital literacy (Selber, 2004; diSessa, 2000) and encompasses a student's understanding of how to 'read' (navigate and explore) and 'write' (create and construct), within a digital medium. An awareness of this digital literacy (and the pedagogical approaches appropriate for the "Net' generation) will become significant for teacher preparation programs in Canada over the next decade.

In *Multiple Literacies for a Digital Age*, Selber (2004) puts forward a conceptual landscape for the notion of digital literacy in terms of three proficiencies.

1) *Functional literacy* where technical skills are present to engage with digital technologies, and the subject position is one of "students as user of tools" (p 25).

2) *Critical literacy* where critical reflection is placed on the use of technologies, such as dealing with ethical issues associated with technology (e.g., downloading songs, movies, software), and "students as producers of technology" (p 25).

3) *Rhetorical literacy* where representations of the world are created or produced in a digital space. The technology is used in creative endeavours versus pure application mode, such as creating personal learning spaces on the Internet (e.g., myspace.com or youtube.com), with "students as producers of technology" (p.25).

Selber's (re)conceptualization of literacy should be expanded to include a fourth understanding that I have created to acknowledge a digitally interconnected global era:

> 4) *Global digital literacy* where a competency is at hand to reconcile the diversity of various cultural perspectives and (digital) communities in the emerging social networks and ethnosphere of the Internet. The subject position is one of 'students as intercultural collaborators with technology'.

When reflecting on the focus group participants' digital literacy, some substantive results emerged from the survey responses. For instance, when asked to identify the frequency to which they used or engaged the Internet within a range of activities, the following three were noted by the overall group response as occurring 'almost every day': *searching the Internet for information of personal interest*, *sending and receiving email*, and *instant messaging (e.g., MSN, Skype)*. These habits are those generally held by a digitally literate generation, yet noticeably different for the younger half of the focus group aged 18-24. To unearth the subtle variations in the participants' digital literacy, the online survey responses were filtered into two age groups, where 53% of the participants were aged 18-24 (Net generation), and 47% were aged 25-34.

In sorting the responses of participants in the 'older', 25-34 age group, instant messaging was not highlighted as a daily occurrence, yet within the 'younger' 18-24 population, 75% noted that they partook in this communicative activity on a daily basis. This same pattern of communication held true for mobile phone messaging, with 62% of the younger demographic 'texting' from their cell phones on daily basis, versus 29% in the 25-34 age group. These different habits are significant in that they produce new epistemologies. As Lankshear and Knobel (2003) suggest, the Net generation (18-24's) are "more performance- and procedure-oriented than propositional, more collaborative than individualistic, and more concerned with making an impact on attention, imagination, curiosity, innovation, and so on, than with fostering truth, engendering rational belief, or demonstrating their justifiability" (p. 176).

In terms of bringing this digital literacy into the classroom, the overall group response identified, from a list of twelve options, the following items as 'very important' or 'important' ICT activities for their teaching practice:

- *searching the Internet (94%)*
- *word processing (93%)*
- *presenting information digitally (87%)*
- *sending and receiving email (87%)*
- *creating and maintaining a website (73%)*
- *online journaling - blogs (60%)*
- *understanding how to teach an online course (46%)*

Again of interest are the subtle variations in pedagogical preferences within the younger half of the focus group. Specifically, participants in the 18-24 age range placed more importance (88%) on presenting information digitally (e.g., PowerPoint) than did the older group aged 25-34 (29%). Further research, and its pedagogical implications, is warranted as presentation technologies (i.e., PowerPoint) pervade educational practice at all levels.

This small and select sample can be compared with a much larger study, entitled: *Are Students Ready for a Technology-Rich World? What PISA Studies Tell Us*, conducted by the Organization for Economic Cooperation and Development (OECD, 2005). This international research was conducted in 2003 with 15 year-old students who were approaching the end of their compulsory schooling from across OECD countries (e.g., Australia, Belgium, Canada, Hungary, Korea, Mexico, the Netherlands, Poland, Turkey, the United Kingdom and the United States). This study is widely recognized as the first internationally comparative data set on the activities of 15-year-old students using computers in the home and school contexts and, therefore, an interesting correlation can be made between the focus group responses, and the Canadian OECD sample (n=27300).

The table below documents the increased variety in uses of the Internet since the inception of the OECD study, and compares the focus group of preservice teachers with the OECD and Canadian averages from 2003. Of particular interest is the activity around a second generation of Internet activities - such as wikis, instant messaging, downloading movies and blogging, collectively known as Web 2.0 applications (O'Reilly, 2005). As Musser & O'Reilly (2006) define it, Web 2.0 is "a set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet - a more mature distinctive medium characterized by user participation, openness, and network effects" (p.4). This Web 2.0 meme represents activities that are often collaborative in nature (e.g., wikis) and involve communicating (e.g., blogging) and sharing among users (e.g., file sharing) on the Internet; a fertile space for educators interested in engaging an educational space with intercultural collaborative inquiry.

Internet Utilization
Focus Group and OECD Study Comparison
Percentage reporting using computers "Almost Every Day" or "A Few Times Each Week"

	Search for Information of Personal Interest	**Send and Receive Email**	**Download Music**	**Instant Message**	**Read or Contribute to a Blog**	**Read or contribute to a Wiki**	**Download Movies**
Canadian Average (2003) N=27300	75%	83%	77%	-	-	-	-
Focus Group (2007) n=15	93%	100%	40%	53%	34%	20%	14%
OECD Average (2003)	55%	56%	49%	-	-	-	-

Section V - Intercultural Collaborative Inquiry on the Internet

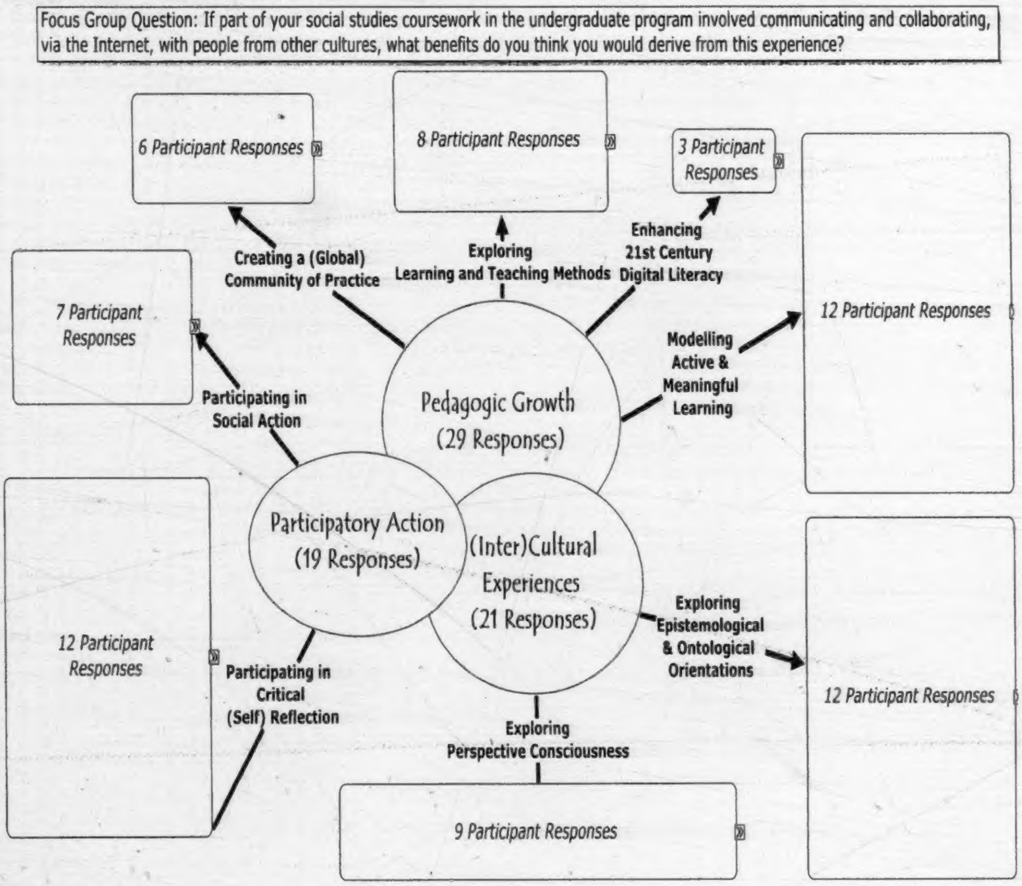
In the second, and most intensive, phase of the focus group, participants were asked to imagine the perceived benefits of engaging in intercultural collaborations on the Internet as part of their undergraduate program, and in doing so expand the space of the possible. The question presented to the group was as follows:

> *If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?*

This question asked the participants to conceptually shift from exploring the research from the perspective of 'teacher', to reflecting as an 'undergraduate student' within the Faculty of Education. During this activity, the participants collectively generated 69 pieces of data that specifically answered the focus question. The fact that such large amounts of data were generated speaks to the interest of the individuals (each generating 3-5 pieces of data) and the focus group method utilized. As noted in the research method section, the process is both complex and reflexive to the flow of individual brainstorming and group discussion.

Emerging from the conversation were three general and overlapping themes: Pedagogic Growth (29 responses), (Inter)Cultural Experiences (21 responses), and Participatory Action (19 responses). Each theme has been further theoretically defined into sub-themes that increasingly contextualize the participant responses. The number of participant responses indicated in each theme and sub-theme can be interpreted as the degree of benefit that the participants placed in the clustered concept.

The data visualization below attempts to cogently illustrate the participants' intra and interpersonal reflections, and confer the interconnected nature of the many responses generated by this discussion.



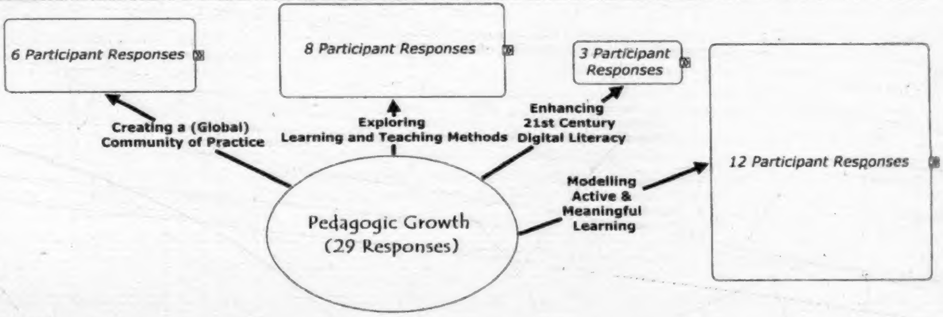
Focus Group Question: If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?

6 Participant Responses
8 Participant Responses
3 Participant Responses
7 Participant Responses
Creating a (Global) Community of Practice
Exploring Learning and Teaching Methods
Enhancing 21st Century Digital Literacy
12 Participant Responses
Modelling Active & Meaningful Learning
Participating in Social Action
Pedagogic Growth (29 Responses)
Participatory Action (19 Responses)
(Inter)Cultural Experiences (21 Responses)
12 Participant Responses
Exploring Epistemological & Ontological Orientations
12 Participant Responses
Participating in Critical (Self) Reflection
Exploring Perspective Consciousness
9 Participant Responses

Theme 1: Pedagogic Growth (29 participant responses out of a total of 69 responses)

The responses in this theme were oriented around the perceived pedagogical benefits of connecting interculturally as a technique for undergraduates to better understand their own teaching practice. Recognizing that these students are in a formative space in their professional growth as beginning educators, the relatively large number of responses in this theme reflects the immediate desires they would face at this stage of their career.

Focus Group Question: If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?


6 Participant Responses
8 Participant Responses
3 Participant Responses
12 Participant Responses
Creating a (Global) Community of Practice
Exploring Learning and Teaching Methods
Enhancing 21st Century Digital Literacy
Modelling Active & Meaningful Learning
Pedagogic Growth (29 Responses)

Representative participant comments for each sub-theme are as follows.

1.1 Modelling Active and Meaningful Learning (12 participant responses)

- *"Provides exposure to real life stories which makes learning more meaningful."*
- *"More fun than listening to your professor talk."*

1.2 Exploring Learning and Teaching Methods (8 participant responses)

- *"Increase knowledge regarding teaching methods, styles."*
- *"Developing new instructional strategies in light of multicultural and pedagogical aspects."*

1.3 Creating a (Global) Community of Practice (6 participant responses)

- *"Connecting other teachers and resources for future activities."*
- *"Broader network of people to draw on and teach with."*

1.4 Enhancing 21st Century Digital Literacy (3 participant responses)

- *"Familiarize yourself with the technology."*
- *"Your technology (overall ICT) skills would increase - be more comfortable when in the classroom teaching."*

Note: These are from the verbatim comments individually recorded on 8½ ×11inch data cards.

1.1 Modelling Active and Meaningful Learning

Representative participant comments for sub-theme as recorded on data cards:

- *"Provides exposure to real life stories which makes learning more meaningful."*
- *"More fun than listening to your professor talk."*

The responses in this sub-theme speak to how human beings make sense of the world and knit together the fabric of meaning from many different learning experiences (in this case online intercultural collaborations). Lave and Wenger (1999) argue that students will have a deeper and more rewarding educational experience if placed in 'real-life' situations. The following comment illustrates one participant's consideration in terms of this online activity making their undergraduate learning experiences more meaningful and active:

> *I have found that I can read all the books I want, but the real insight you get is from talking to people. Through this [online] dialogue, one can gain an insight into their lives in a way that no book or case study can. One gets to ask the questions they find to be the most important, and the dialogue is structured in a way that is most easily interpreted by each individual student.*

This comment also articulates a belief that knowledge of the world is both socially and culturally constructed (Kukla, 2000; Gredler, 1997; Vygotsky, 1978). Considerations in this sub-theme speak to notions of intersubjectivity (Davis & Sumara, 2005), where interpersonal accord and claims of meaning form as a results of the exchange. In such acts, a potential exists for students to move beyond prescribed curriculum (i.e., social studies) into experiences and tendencies that create powerful learning for the individual and group.

1.2 Exploring Learning and Teaching Methods

Representative participant comments for sub-theme as recorded on data cards:

- *"Increase knowledge regarding teaching methods, styles."*
- *"Developing new instructional strategies in light of multicultural and pedagogical aspects."*

This sub-theme recognizes the power of collaborative partnerships that can form in and among communities of practice (Wenger, 2007, Lave & Wenger, 1999). Such experiences are valuable as students enter the teaching profession and become members of their own unique community of practice within a learning context, thus the interest by the participants in extending their own teaching network globally in sub-theme 1.3. As on participant says:

> *The benefit is that you can go directly to the source and communicate with people, not just ideas. Collaboration is an activity that will make students feel that they are actively contributing to something, so the idea will have personal meaning for them because it is grounded in their own experience.*

Hargreaves (2003) proposes that cultivating the capacities for young people to live in a knowledge society means educators should focus on developing, "deep cognitive learning, creativity, and ingenuity among students…working in networks and teams, and pursuing continuous professional learning as teachers, and promoting problem-solving, risk-taking, trust in the collaborative process." (p. 10).

1.3 Creating a (Global) Community of Practice

Representative participant comments for sub-theme as recorded on data cards:

- *"Connecting other teachers and resources for future activities."*
- *"Broader network of people to draw on and teach with."*

In this sub-theme, the participants imagined that the experience of online intercultural collaborations within the undergraduate program would create and build on their community of practicing teachers and extending this network to 'colleagues' from around the world; a surprising finding of this research. If participants are digitally literate and comfortable navigating in and around web-based personal social networks, then such activities hold promise for professional development practices in the 21st century. Research into the implications of such online social networks, and how they can destabilize the traditional backdrop of face-to-face workplace interactions, is just beginning to be explored.

Nardi et al. (2002) have investigated the emergence of online collaborative inquiry in the workplace, and the formation of what they call 'netWORKers', who are involved virtually in the "creation, maintenance, and activation of personal social networks" (p. 206). In this research they argue that, "Rather than being embraced by and inducted into communities of practice, netWORKers laboriously build up personal networks, one contact at a time…collective subjects are increasingly put together through the assemblage of people found through 'intensional' networks rather than being constituted as teams created through organizational planning and structuring." (p. 237). As these undergraduates imagine a community of practice moving outside of the borders of their school, indeed framed in global social networks, then formal professional learning communities (Dufour & Eaker, 1998) will likely look very different for educators in future K-12 school contexts.

1.4 Enhancing 21st Century Digital Literacy

Representative participant comments for sub-theme as recorded on data cards:

- *"Familiarize yourself with the technology."*
- *"Your technology (overall ICT) skills would increase - be more comfortable when in the classroom teaching."*

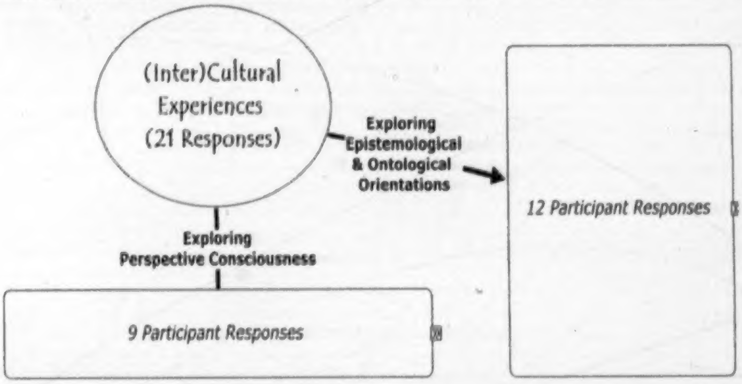
This sub-theme had the least responses under the theme of 'Pedagogic Growth', and thus the least perceived benefit of communicating and collaborating on the Internet across cultures. In speculating as to why this may be so, perhaps this group of preservice teachers believed that their existing skill set with email and instant messaging would provide them with enough means to technologically navigate intercultural exchanges on the Internet. This level of confidence in (inter)personal communication online is an interesting consideration, because it does not correlate with their pedagogic comfort level with technology. When queried as to their confidence level in using technology as an enhancement to teaching and learning, only a slight majority of the group identified themselves as being 'somewhat confident' (53 %). This finding indicates a discord between their personal use of email and instant messaging – 'almost every day' - and what they seem to conceptualize as powerful technologies for learning and teaching.

When asked how they thought their abilities to use technology as an enhancement for learning and teaching would change in the future, 68 % suggested they would 'greatly improve', and 27 % 'slightly improve.' This finding further suggests that these preservice teachers believe learning and technology, as a pedagogic practice, is to be attained outside of the Faculty of Education. This calls into question how learning and technology (as a curriculum within a curriculum) is being subtly relocated outside of formalized teacher education programs into other presumably more suited contexts – workplace? home? community access points?

Theme 2: (Inter)Cultural Experiences
(21 participant responses out of a total of 69 responses)

The responses in this theme focused on exploring how other cultural groups come to 'know' and 'be' in the world, and the unique perspectives that preservice teachers might unearth through intercultural collaborative inquiry online.

Focus Group Question: If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?


(Inter)Cultural Experiences (21 Responses)
Exploring Epistemological & Ontological Orientations
12 Participant Responses
Exploring Perspective Consciousness
9 Participant Responses

An important consideration for this theme is the lack of spontaneous intercultural exchange occurring on university campuses among international and domestic students. Different researchers suggests that on-campus intercultural exchange often places international students in a minority position, where they feel subject to the hegemony of the majority domestic culture (Obong, 1997). In her report to the New Zealand Ministry of Education addressing the impact of international students on university classrooms, Ward (2001) states:

> Research has shown that the presence of international students, even in large numbers, is insufficient in itself to promote intercultural interactions, to develop intercultural friendships and to result in international understanding. Rather, situations must be structured to foster these processes. Studies have also revealed that students, both local and international, perceive it is the responsibility of educational institutions to increase and enhance intercultural interactions (p. 4).

Representative participant comments for each sub-theme are as follows:

2.1 Exploring Epistemological and Ontological Orientations (12 participant responses)
- *"Appreciate the complexities of language, culture and communication."*
- *"Explore new cultural customs."*

2.2 Exploring Perspective Consciousness (9 participant responses)
- *"Obtain multiple perspectives on complex issues of global significance."*
- *"Understand different views of Canadian culture."*

Note: These are from the verbatim comments individually recorded on 8½ ×11inch data cards.

2.1 Exploring Epistemological and Ontological Orientations

Representative participant comments for sub-theme as recorded on data cards:

- *"Appreciate the complexities of language, culture and communication."*
- *"Explore new cultural customs."*

In this theme focus group participants articulated how dialogic encounters could become a means of inquiring into other cultures epistemological and ontological orientations. The comments spoke to an epistemological humility by recognizing that there are other ways of knowing in the world. The comments in this sub-theme were bold in that they recognize that, when individuals engage perspectives different from their own and listen to other voices, they may in fact shed light on the many assumptions one holds to be true. As Julia Kristeva (1991) advocated, the idea of the 'other' - be it cultural, religious, gender, social, national - needs to be accepted while divergent perspectives are appreciated to keep the promise of a global social harmony alive. In such thinking, individual agency is conceived in light of divergent epistemologies, and may break from a privatization of knowing (i.e., neoliberalism), to reading the world as a complex and interconnected network of perspectives.

The responses in this sub-theme also suggested that an online intercultural exchange may in fact become a mirror into one's own ontology, and by engaging the 'other' we become sensitive to our own strangeness. This is essentially the premise of an educational hermeneutics (Gallagher, 1992), which suggests that, as our view of the world is disrupted, a new space opens up for an inquiry into other ways of knowing and being. It is also reminiscent of both Freire (1996) and Freinet's (1974) experience with the pedagogies of reflective distancing, where these undergraduate students would be one step removed from their local realities via intercultural dialogue and, in that distancing, are led to a shared critical reflection about their own epistemological and ontological orientation. Hence, the ancient Confucian philosopher Lao Tzu elevated the knowledge of oneself above the wisdom of knowing 'others': "He who knows others is wise; he who knows himself is enlightened" (Yao, 2005, p. 308).

In terms of intercultural communication, the majority of the responses in this subtheme were generally reminiscent of the theoretical 'ethnorelative' stages in Bennett's (1993) Developmental Model of Intercultural Sensitivity. The following participant comment points directly to Bennett's (1993) stages of *acceptance* (curious about and respectful toward cultural difference) and *adaptation* (are able to look at the world "through different eyes" and may intentionally change behavior to communicate more effectively in another culture):

> *I think the most important aspect of globalization will be making a personal connection with someone else of another culture... When you are able to make that personal connection with someone that looks different than you or speaks a different language, it goes a long way in realizing that we all share common similarities and differences.*

As quoted in Ball and Farr (2003), "The most important principle of effective instruction for culturally and linguistically diverse student[s] is that of ethnosensitivity (Baugh, 1981). It is crucial that teachers understand that their own views of the world, or ways of using language in that world, are not necessarily shared by others" (p. 440). The preservice teacher participant responses generally showed a concern for ethnosensitivity by indicating they would be open to exploring the other in themselves.

2.2 Exploring Perspective Consciousness

Representative participant comments for sub-theme as recorded on data cards:

- *"Obtain multiple perspectives on complex issues of global significance."*
- *"Understand different views of Canadian culture."*

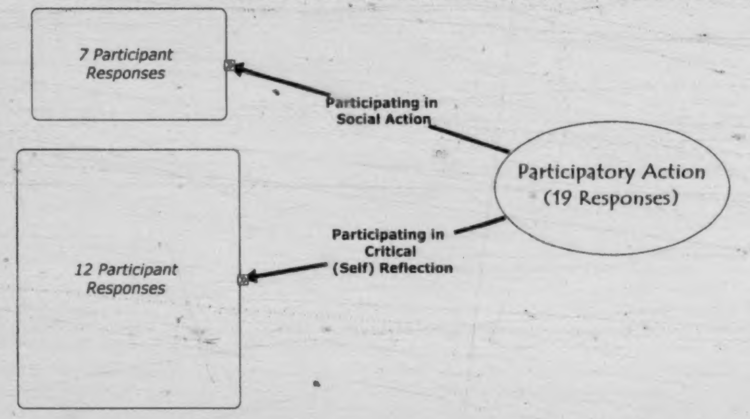
Many responses in this theme resonated with perspective consciousness (Pike & Selby, 1988), which recognizes that we each have a view of the world that is not universally shared and that the perspectives of others have their own legitimacy. This reading of perspective consciousness is further supported by theories of reflection, as applied to teacher education programs. Hatton & Smith (1995) present the following four forms of reflection: *descriptive writing; descriptive reflection; dialogic reflection; and critical reflection.* At the most complex form, *critical reflection*, preservice teachers who engage in an online intercultural exchange would have opportunities to challenge their assumptions of the world and their educational practice as social studies teachers. As two participants declare:

> *I could tell my students all about the concept of global citizenship by bringing in resources, but I don't feel that really compares to the opportunity of learning from someone first hand, there are only so many perspectives I can relay in an accurate or fulfilling way.*
>
> *A Global Citizen should be a critical thinker who can examine issues from multiple perspectives, and be open to ideas from those perspectives. They should be able to examine their own biases, as well as recognise the biases of others.*

Theme 3: Participatory Action (19 participant responses out of a total of 69 responses)

Responses in this theme focused on moving from experiences that broadened views of the world and enhanced an understanding of teaching and learning, to participatory action. It is at the 'glocal' (Arnove & Torres, 1999) - the locus of movement between the global perspective and the local context - where an imagination of 'active' global citizenship emerged in the participant responses. Richardson et al. (2003) suggested, when students enter into an intercultural collaboration they "need to be able to engage in an active process in which they can discuss issues of mutual concern, plan on courses of action to address the concerns they have identified, act on the plans they devise, and reflect on the consequences of their actions" (p. 416). In essence, a shared object of inquiry, a plan for action, its implementation, and reflection are all enmeshed in the concept of participation via (online) intercultural collaborative inquiry.

Focus Group Question: If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?


7 Participant Responses
Participating in Social Action
Participatory Action (19 Responses)
Participating in Critical (Self) Reflection
12 Participant Responses

Representative participant comments for each sub-theme are as follows:

3.1 Participating in Critical (Self) Reflection (12 participant responses)
- *"Forces teachers to address their preconceived notions."*
- *"Critically analyze Eurocentric world views & question my own values."*

3.2 Participating in Social Action (7 participant responses)
- *"A vested interest and commitment to intercultural cooperation."*
- *"Students engage in part of something bigger."*

Note: These are from the verbatim comments individually recorded on
8½ ×11inch data cards.

3.1 Participating in Critical (Self) Reflection

Representative participant comments for sub-theme as recorded on data cards:

- *"Forces teachers to address their preconceived notions."*
- *"Critically analyze Eurocentric world views & question my own values."*

As participants spoke about participating in critical (self) reflection, they articulated a kind of action that was critical of one's values, ethics, bias, and that moved to addressing issues through personal or collective social action. The responses indicated that the focus group participants were looking for ways to engage in a participatory epistemology, where "knowledge is embodied or enacted in the ever-unfolding choreography of action within the universe" (Davis & Sumara, 2006, p. 70). The action of most interest was indeed to challenge and, if necessary, alter their worldview.

3.2 Participating in Social Action

Representative participant comments for sub-theme as recorded on data cards:

- *"A vested interest and commitment to intercultural cooperation."*
- *"Students engage in part of something bigger."*

Specific considerations the participants noted in regards to social action were the following: donating to a cause online (e.g., hunger, aids, and environment) (73%); reading and contributing to political websites or blogs (73%); and signing an online petition (46.7%). These responses can be located in an emerging trend with online activism, where social networks are beginning to blur the lines between the realities of an 'online' and 'offline' world. "Almost two-thirds of online community members who participate in social causes through the Internet (64.9 %) say they are involved in causes that were new to them when they began participating on the Internet. And more than 40 % (43.7 %) of online community members participate more in social activism since they started participating in online communities" (Digital Future Report, 2007). It is conceivable that future social activism supported in classrooms will flourish in (and out) of cyberspace and, in doing so, substantiate the participants' contributions toward an 'active' global citizenship.

One key area underlying participatory action on the Internet is how culture can be mediated during web-based interactions. In a face-to-face situation, culture is established over a period of time and agreed upon; however, there may not be the same negotiation in an online interaction. One study examining a Japanese-American online collaboration provides some insight into how culture is negotiated online: "They must articulate their own praxis and habitus to others in cross-cultural negotiation. They sometimes face power inequity as they deal with someone else's dominant perspectives. In this learning process, they are encouraged to think about their own cognitive, affective, social, and conceptual learning styles and modes of thinking" (Hamada and Scott, 2000). We can also turn to Paulo Freire who spent a lifetime thoughtfully examining culture and the nature of exchanges between teachers and students, when he advises that "culture is a field of struggle over meaning, a many sided-conversation that is never neutral." (McLaren, 1989, p. 195).

Other researchers in the area of online collaborations have identified several challenges to participatory action that would include: "support for communication; support for handling sharable resources and making them available; socio-dynamic aspects of supporting the group (maintaining coherence); and integration of the project with the curriculum in which it is embedded" (Collis et al. 1997). Consequently, for global collaboration and communication to be utilized as a successful pedagogical approach to student learning, these challenges must be further investigated.

Teacher Education Program Reforms

Of concern to supporting the intercultural collaborative inquiry on the Internet, as imagined by this focus group, is a study conducted within a provincial, national and international context that identifies the lowest level of technology use "occurs in faculties of education, where teachers are prepared to meet the challenges of the new millennium" (Larose et al., 1999). For teacher education programs to continue supporting meaningful and relevant teaching and learning practices in a global era, clearly the pedagogical practices must speak directly to this digitally literate preservice teacher population. As Clifford et al. (2004b) note from their research observations of teacher education programs across Alberta, "We did not see such (digital) literacies strongly addressed in the programs of pre-service teachers. One of the major reasons for this current state of affairs seems to be the absence of engagement with technology-related issues in "other" curriculum and methods courses, or in foundations classes" (p. 157). The responsibility for preparing qualified and competent teachers resides within faculties of education, where teacher-educators are the fulcrums to carrying forward educational reforms that will support this emergent preservice teacher digital literacy.

Many faculties of education in Canada have completed or are about to commence reviews of their undergraduate teacher education programs (Wimmer, & Walker, 2007). At the University of Alberta, such a review by Foster et al. (2007) has just been completed and calls for several reforms. In terms of effective modeling of learning and technology by faculty, a concern was raised by students that a weakness of the program was "not enough use of technology" (p. 27). Also included in this report is a concern that the undergraduate program "does not have in-depth coursework on diversity and equity" (p. 13). The report goes on to suggest that "most students in the program have a limited understanding and limited experiences with worldviews beyond their own and seem to be resistant to any consideration of other cultural perspectives or worldviews" (p. 21).

Of specific interest to the Canadian context is a 2006 Accord on Initial Teacher Education that has recently been signed by the Association of Canadian Deans of Education (2006). In this document, 12 principles are highlighted as necessary for initial teacher education. The following excerpts from this accord speak to a space for intercultural collaborative inquiry on the Internet, where effective teacher education:

- promotes diversity, inclusion, understanding acceptance, and social responsibility in continuing dialogue with local, national, and global communities;
- engages teachers with the politics of identity and difference and prepares them to develop and enact inclusive curricula and pedagogies;
- ensures that beginning teachers have sound knowledge of subject matter, literacies, ways of knowing and pedagogical expertise;
- supports thoughtful, considered, and deliberate innovation to improve and strengthen the preparation of educators.

Finally, Harvard University (2004) has recently undergone a review of its undergraduate education curriculum, and in a final report, recommends internationalization as the first of six key reforms. This report makes a persuasive case to transform the teaching and learning experiences of Harvard University students in a global era:

> First, today's world requires a greater emphasis on internationalization…we must aim to prepare students to live as citizens of a global society. Our students of the twenty-first century go out into a world made smaller by technology, but still defined by different and changing cultures and civilizations. They may well find themselves living and working in another part of the world, and surely must expect to work with colleagues who bring with them differing cultural assumptions (p. 8).

The direction towards internationalizing the curriculum activities espoused by Harvard University is often imagined as a face-to-face intercultural exchange. However, the catalytic potential to move teacher education programs beyond traditional educational practice, or what Dewey (1954) would imply is "the crust of conventionalized and routine consciousness" (p. 183), may be located in the complex realities of globalization -- ubiquitous access to the Internet and ICT, curricular reforms speaking to the notion of global citizenship, and the changing epistemologies of a digitally literate generation of students entering Canadian faculties of education.

Considerations for Future Research

To take up the challenge of how to prepare teachers for a global era, many essential questions exist for teacher education programs and educational researchers. Considerations for future research, in keeping with the notion of global citizenship and intercultural collaborative inquiry on the Internet, include the following questions:

- What is the nature of global competency and global citizenship, as represented in school curriculum? To what extent does it reconceptualize education for a global era, or obfuscate economic imperatives?
- How is culture mediated or (re)created in an online intercultural exchange where cultures and sub-cultures are continually emerging? How can we provide access to the stories that surface from such exchanges?
- How might digital storytelling, socially open webspaces (e.g., wikis), and social networking platforms (e.g., orkut.com, facebook.com, myspace.com, hi5.com, second life) impact learning and teaching of social studies?
- Which emerging online environments (e.g., wiki's and blogs) and digital applications (e.g., voice over internet communication, graphical avatars and Internet videoconferencing) provide the functional form and collaborative shape for online intercultural inquiry?

Exploring these questions requires a trans-phenomenal and philosophically inter-discursive dialogue with colleagues from the field of education, new media theory and intercultural communication, all working towards unpacking the incredibly complex philosophical assumptions underlying an enthusiasm for the Internet as a space of dialogue among global citizens. Even attempting to answer these questions speaks to both the values teacher education programs hold dear and educators' ongoing commitment to educating a digitally literate generation. As societies become more conscious of the environmental challenges and geopolitical context implicated by globalization, the questions posed at the end of this manuscript take on even greater urgency for teacher education programs.

Conclusion

Societies all over the world are struggling with the complex challenges brought on by globalization's nascent affects. These challenges are of a magnitude that humankind has yet to confront, and it will take the collective will of people from around the world to navigate an uncertain future. This paper has argued that effectively exploring and understanding the varied complexities associated with these challenges requires intercultural conversations involving citizens from around the world. In essence, a conversation among 'global' citizens is required to address the state of the planet and contemplate humanity's uncertain future. The beginning teachers who participated in this focus group were overwhelmingly cognizant of the potentials (and many of the challenges) associated with such conversations as located on the Internet. As one response from the focus group so eloquently states:

> *We will no longer be bound to textbooks for learning, but rather hear from the actual source about these issues. I also believe that through developing relationships and an understanding of other cultures, students and teachers will begin to think in new ways, and encourage connections between people from different cultures. In fact, I believe that if we make this [online intercultural collaborative inquiry] an important mandate in the school system, students will leave high school with these notions of intercultural communication imbedded in their identity. This is an invaluable resource for students who begin to pursue post secondary education and the workforce (which is becoming ever more global).*

As our schools and social environments become increasingly permeated by the Internet and its requisite technologies, the significance of this medium to educational practice will evolve. It is imperative that teacher educators are mindful of the discourses around emerging online technologies, and the new forms of social reality (and global social networks) they are creating. In this work, teacher educators must also be thoughtfully committed to an awareness of "cyberculture practices, cultural foundations shaping new technologies [and] the political economy of cyberculture" (Escobar, 1994). Further research is needed into the social and pedagogical implications of this ubiquitous connectivity to the Internet (and its converged state in the home and school contexts), with the hope that educators might work towards a deeper realization of its pedagogical potentials in a global era.

Several implications of this focus group research have been articulated throughout this manuscript, all of which are influenced by many complex dynamics, such as the technological shrinking of time and space, so that our world is no longer insulated from cultural difference. We are living at a time where it seems essential that faculties of education critically reflect on the path by which they have come to their current practice(s), and where they will be positioned on a complex journey towards a ubiquitously networked global society. If, as educators, we are to be mindful contributors in societies that are increasingly defined by the trans-national flow of ideas, technology, people, capital and culture (i.e., globalization), then we are at a "pedagogical moment" (Van Manen, 1991) in our profession. It is a moment where faculties of education must support preservice teachers with the knowledge, digital literacy, and intercultural understanding to thoughtfully and effectively educate students for a global era.

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CHAPTER SEVEN
Epilogue

"Progress lies not in enhancing what is, but in advancing toward what will be."
~ Khalil Gibran

Introduction

My experiences living in tribal cultures over several years in the Middle East (i.e., Bedouin), and with the Kainai Nation (i.e., Niitsitapii) in Southern Alberta, Canada, have often entailed gatherings that both began and ended with a certain form of apology. In this tribal custom, it was appropriate to acknowledge that the collective conversation would always contain issues that are left unclaimed or neglected. I feel compelled to share a similar apology as this dissertation comes to a close, and the work is further synthesized.

As an experienced educator, I am cognizant of the emergent and always complex nature of teaching and learning, especially when it is enmeshed within the online dynamics of the Internet and World Wide Web. Therefore, it is my hope to have not reduced this complexity to such a compressed description of the different issues that it distorts or oversimplifies the multifarious nature of intercultural collaborative inquiry on the Internet. Indeed, it is my hope that what has been left unsaid, or neglected, will provide fertile ground for other researchers and educators interested in online pedagogies that favour education in a digitally interconnected 21st century.

Synthesis

This research study was conducted to offer a deeper understanding of the complexities and considerations engendered by intercultural education exchanges within the collaborative spaces of the Internet. The discoveries over the course of my research have been reconciled by numerous scholarly text, hours of reflection and contemplation, synthesis of research findings, discussion with colleagues (around the world), and my own ever-evolving understanding of emerging technologies and empowering pedagogical approaches on the Internet. In reflecting on the research undertaken, it seems to me that I am now engaging with even more unanswered (research) questions. I have noted this engagement more specifically in the considerations for future research in each of the papers of this dissertation.

In light of this ambiguity, I now have a much deeper understanding of the dynamic nature of the Internet as an educational 'space'. Specifically, I have gained a new understanding of the nature of the Internet as a rapidly changing cyberspace defined by burgeoning global online user populations and the consequential shifts in dominant languages that are (re)shaping the dynamic cultural tempo of the Internet. Yet paradoxically, I have come to believe there is a potential within this dynamic cyberspace (with its rich dialogic content, social open webspaces, and cultural activities) for individual and group polarization (i.e., echo-chamber phenomenon) that detracts from an otherwise heterogeneous space of educational practice in a global era. Thus, this dissertation in part calls for pedagogic action that brings undergraduate social studies teachers together online with 'other' ethnic cultures so that they might collaborate over common issues and concerns in a way that brings an 'epistemological humility' to the work and, in doing so, supports an appreciation that we all have unique perspectives of the world. Within this recognition of diversity lies an opportunity for a new generation of educators to support students who will tackle the challenges (socially and environmentally) that face us all.

Reflection

As this particular academic journey comes to a close, I also wish to dedicate some space within this dissertation to reflecting on the paper-based format, and my personal experiences within this relatively novel manuscript design. In reflecting on this experience, I can explicate some 'lessons learned' that I hope will benefit other researchers wishing to engage in a similar format.

At the inception of this project, I understood the very complex nature of the subject I was about to embark upon, and was looking for a way to approach the various dimensions of my inter-discursive inquiry so that they would be accessible (and publishable) within the field of education. The paper-based format seemed a suitable approach to compiling the scholarly articles in a way that would alleviate any confusion, yet maintain a coherent frame of reference for my inquiry. A lesson I learned at the outset was the need to maintain a fine balance between the different methodological and theoretical frameworks, and the more fluid and diverse research papers, each of which were concerned with a “situational responsiveness” (Patton, 1990, p. 39) for the inquiry situation.

In this regard, I would suggest that the research question(s) and method for each paper be made transparent, at the earliest stages of the doctoral candidate’s preparation with the supervisor and core supervisory committee, so that a rigorous research approach for each paper can be structured. This transparency allows for the committee, with their extensive experience with different research methods, to guide the researcher on his/her journey as it unfolds. An ongoing dialogue with my core supervisory committee also brought forth the recognition of the challenges inherent in keeping a methodologically coherent paper-based dissertation, whilst avoiding any undue overlap and repetition due to the close relationship of the topics of the articles. In my circumstance, the supervisory committee supported my decision to approach this inquiry as a paper-based dissertation format, even as I personally struggled to maintain the methodological ‘fine balance’ necessary for each paper’s inquiry. In particular, I found my supervisor’s research experience to be especially helpful in keeping the dissertation grounded in the scholarly value and academic rigour of elements of a more standard monograph (e.g., introduction, theoretical framework, literature review, methodology, and concluding perspectives).

As noted, in my particular journey, methodological challenges marked the paper-based format experience. As the scope and nature of this dissertation flowed across different domains, the unique challenges with the methods for each paper were to be found around the movement from one frame of reference to another, with the reader being asked to shift (paradigmatically) from one article, and its associated research approach, to the next. This transitioning can be found to be further complicated by the inclusion of some quantitative data, and mixed methods approach, found within the papers. In an attempt to mediate this potential conflict for the reader, each of the papers entailed the following organizational structure: an introduction to the topic, a transparent description of the theoretical context, a rationale for the study, the research question(s), research methods, a statement of limitations, the findings, an evaluation of the significance and implications of the findings of the research, considerations for future research at the time of publication of this dissertation, and a concluding statement. The extent, to which this organizational structure is facilitative, is now ultimately to be judged by you - the reader of this dissertation. However, despite the methodological challenges, I found that throughout this journey the paper-based format allowed me to uniquely capture detailed and meaningful data for the inquiry, and in doing so contextualize the new understandings that were yielded within each paper's exploration.

Phronetic Action

In closing, I have come to believe that, when determining a practical starting point to enhancing educational practices through intercultural collaborative inquiry on the Internet, phronetic action, as articulated by Flyvbjerg (2004), might inform the task. Phronesis is an Aristotelian consideration that has been variously translated to mean 'contextualized' practical wisdom. As Eisner (2002) suggests, phronesis refers to wise practical reasoning, and is "deliberative, it takes into account local circumstances, it weighs tradeoffs, it is riddled with uncertainties, it depends upon judgement, profits from wisdom, addresses particulars, it deals with contingencies, is iterative and shifts aims in process when necessary. Practical reasoning is the stuff of practical life" (p. 375). The very purpose of phronetic action is to clarify the specific values, interests and power relations in a situation, and then consider these in light of potential actions, problems and risks that are to be faced in a certain domain of (pedagogic) action.

Bent Flyberg (2004) presents several value-rational questions for phronetic social action that I have adapted for educators to posit and answer as they employ their judgement regarding intercultural collaborative inquiry on the Internet. The purpose of these questions for phronetic action is to clarify where educators are in their practice, where they want to go in light of globalization's impacts on education, and what they deem is desirable according to their very contextualized and diverse sets of values and interests in educating students for a global era.

(1) **Where are we going in a global era?**
(2) **Who gains and who loses if students engage interculturally on the Internet?**
(3) **By which mechanisms of power is this activity mediated?**
(4) **Is intercultural collaborative inquiry on the Internet a desirable action?**
(5) **What, if anything, should we do about it?**

The “we” referred to in these questions will always be situated in relation to a very specific context; however, included are individuals or groups asking the questions and those who share their concerns, including the education community at large. I would hope that teacher education programs in particular will deliberate over these questions, and in doing so reach beyond the analytical, epistemic and technical knowledge, and involve judgments and decisions in a manner that supports a participatory pedagogy around intercultural collaborative inquiry on the Internet in a global era.

There exists a great deal of experience and research around the pedagogical and technical approaches to fostering and shaping respectful online communities; however, activities that bridge exchanges across cultures within the undergraduate program would be a new domain of pedagogic action requiring careful educational considerations (as noted in the papers of this dissertation). Faculties of education are well-positioned to awaken the educational possibilities and challenges afforded by the Internet and ICT as a bridge of exchange for intercultural collaborative inquiry and as a means by which to introduce preservice teachers to new cultures and perspectives for an imagined ‘global citizenship’ of the 21st century. My future line of research will continue to engage the questions presented in this dissertation with a realization that, as one question is explored and elucidated more fully, many others emerge, much like the dynamic nature of the World Wide Web.

References

Eisner, E. (2002). From episteme to phronesis to artistry in the study and improvement of teaching. *Teaching and Teacher Education*, *(18)*, 375 - 385.

Flyvbjerg, B. (2004). Phronetic planning research: Theoretical and methodological reflections. *Journal of Planning Theory & Practice*, *(5),* 283–306.

Patton, M. (1990). *Qualitative evaluation and research methods*. Newbury Park: Sage Publishing.

APPENDIX A

INFORMED CONSENT FOR FOCUS GROUP

Research project: *Intercultural Education Exchanges on the Internet: A Collaborative Ontology for Beginning Teachers in a Global Era*
Principal Investigator: Phil McRae – phil.mcrae@ualberta.ca, phil.mcrae@shaw.ca

I, ________________________________, consent to participate in the research project "*Intercultural Education Exchanges on the Internet: A Collaborative Ontology for Beginning Teachers in a Global Era*". The purpose of this research is to explore the pedagogical potential for beginning social studies teachers to use the Internet, and emerging technologies, as a medium for collaboration and communication across cultures.

I give my consent to participate in a focus group activity and to capture my experiences in an online survey regarding this topic. I understand that the focus group will be recorded on audio tape I understand that only the principal investigator, Phil McRae, and his research supervisors will have access to the original data (e.g., audio-tape, focus group note cards, researcher notes). I understand that the information I provide will be kept anonymous by not referring to me by my name, but by using a pseudonym. I understand that the information I provide will be used in a doctoral dissertation as well as research presentations, reports or other scholarly manuscripts for publication.

I understand that I am free to withdraw from the study, to refuse to answer specific questions, and/or to withdraw my participation at any time, provided this withdrawal takes place prior to the completion of data analysis. I understand that participation in all aspects of the study is voluntary.

Participant:	Researcher: Philip McRae
Email:	Email: pmcrae@ualberta.ca
Signed:	Signed:
Date:	Date:

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEA REB c/o Betty jo Werthmann at (780) 492-2261.

APPENDIX B
ONLINE SURVEY INSTRUMENT
(Created by Philip McRae 2007)

Demographics

1. Please select the appropriate items that apply to your profile from the drop down menus below.

Gender: Male Female

Age: 18-24 25-34 35-44 45-54 55 and older

Major: Art Drama Language Arts Mathematics Music Career & Technology Studies Second Languages Sciences Social Studies Other

Program: APT IPT

2. Have you participated in any significant intercultural or international experiences outside of the Faculty of Education (i.e., living in another culture, travelling extensively overseas, working for many months with a cultural group different than your own)?

Yes. (Please briefly describe this experience).
No

Attributes of (Inter)Cultural Competency – Self Rating

3. How do you see yourself 'socially or informally' interacting within your own culture? Please rate yourself on the following attributes.
Answer Options: *Always* *Often* *Almost Never* *Never*

I am patient
I lack a sense of humour
I accept differences
I suspend judgment
I am motivated
I am tolerant
I am curious
I am open-minded
I am flexible
I am adaptable
I am self-reliant
I am empathetic
I have a clear sense of self
I am perceptive
I accept ambiguity

Digital Literacy (Origins)

4. In general, who has taught you the most about using computers and the Internet?

My K-12 school teachers
My University professors
My friends
My family
Other students
I taught myself
Other (please specify)

Digital Literacy (Online and New Media - Frequency of Use)

5. How often do you use (or engage) the following the Internet based activites?

- *Almost Every Day*
- *A Few Times Each Week*
- *Between Once a Week and Once a Month*
- *Less Than Once a Month*
- *Never*

Search for information of personal interest (e.g., Google)?
Collaborate 'live' with a group or team (e.g., webconferencing)?
Download software (including games)?
Create a personalized online environment (e.g., myspace.com, personal website)?
Play computer games (online)?
Download music?
Download materials to support my teaching?
Download materials to support a university course(s)?
Download movies?
Participate in an online course(s)?
Send and receive email?
Instant message (e.g., MSN, Skype)?
Write on a discussion board?
Read or contribute to a Blog?
Create or listen to a Podcast?
Read or contribute to a Wiki (e.g., wikipedia.org)?
Purchase products online?

Digital Literacy (Offline Technologies - Frequency of Use)

6. How often do you use (or engage) the following technologies?
Answer Options:
- *Almost Every Day*
- *A Few Times Each Week*
- *Between Once a Week and Once a Month*
- *Less Than Once a Month*
- *Never*

Talk on a cellphone?
Send text messages on a cellphone?
Word process (e.g., Word®)?
Create Spreadsheets and Databases (e.g., Excel®)
Draw, paint or use graphics programs on a computer?
Use educational software (e.g., mind-mapping, math/science software)?
Play (offline) computer games?
Use a computer for programming?
Watch television?
Go to a movie theater?
Take digital photographs (including cellphone cameras)?

Digital Literacy (Teaching)

7. How confident are you in using technology in your own teaching and learning?
Answer Options: *Very confident* *Confident* *Somewhat confident* *Not confident*

8. In the future, how do you think your abilities to use technology as an enhancement for learning and teaching will change?
Answer Options: *Greatly improve* *Slightly improve* *No change* *Get worse*

9. How important are each of the following digital skills for your teaching?
Answer Options: *Very Important* *Important* *Somewhat Important* *Not Important*

Word processing
Search for information on the Internet
Understanding how to teach an online course
Use a data base or spreadsheets
Instant message or live chat
Send and receive e-mail
Write a computer program
Digitally create or modify a picture, animation or video
Present information digitally (e.g., PowerPoint)
Online journaling (e.g., blogging or discussion forums)
Create and maintain a website
Downloading software from the Internet

Global Citizenship (Definition)

10. Alberta's new social studies curriculum identifies specific values/attitudes and skills/processes in relation to the concept of 'global citizenship'.

For example, the Social Studies 10-1 curriculum states: "Globalization, the process by which the world's citizens are becoming increasingly connected and interdependent, demands that students explore responsibilities associated with local and global citizenship and formulate individual responses to emergent issues related to globalization."

In your own opinion, what do you think it means for an individual to be a 'global citizen'?

If possible, please provide example(s) of knowledge, skills or attributes that could be used to define an individual as an active 'global citizen'.

Global Citizenship (Importance and Approach)

11. How important is the concept of global citizenship in secondary social studies teaching?
Answer Options: *Very Important* *Important* *Somewhat Important* *Not Important*

12. Do you think communicating and collaborating on the Internet with other cultures would enhance the way you teach the concept of global citizenship? Please explain your answer.

Intercultural Collaborative Inquiry on the Internet

13. Prior to this focus group, had you considered the potential role of the Internet for communicating and collaborating with people from different cultures as part of your University preservice teaching experience?

If 'No', please explain why not.
If 'Yes', please tell me how you envision this taking place.

14. Do you think it will be feasible to use the Internet for communicating and collaborating with people from different cultures as part of your social studies teaching practice in a school?

Please explain your answer.

15. Please identify from the following list, examples of actions that people might take that demonsrate their use of the Internet for active global citizenship.

You can choose more than one answer, and include your own considerations in the 'other' category.

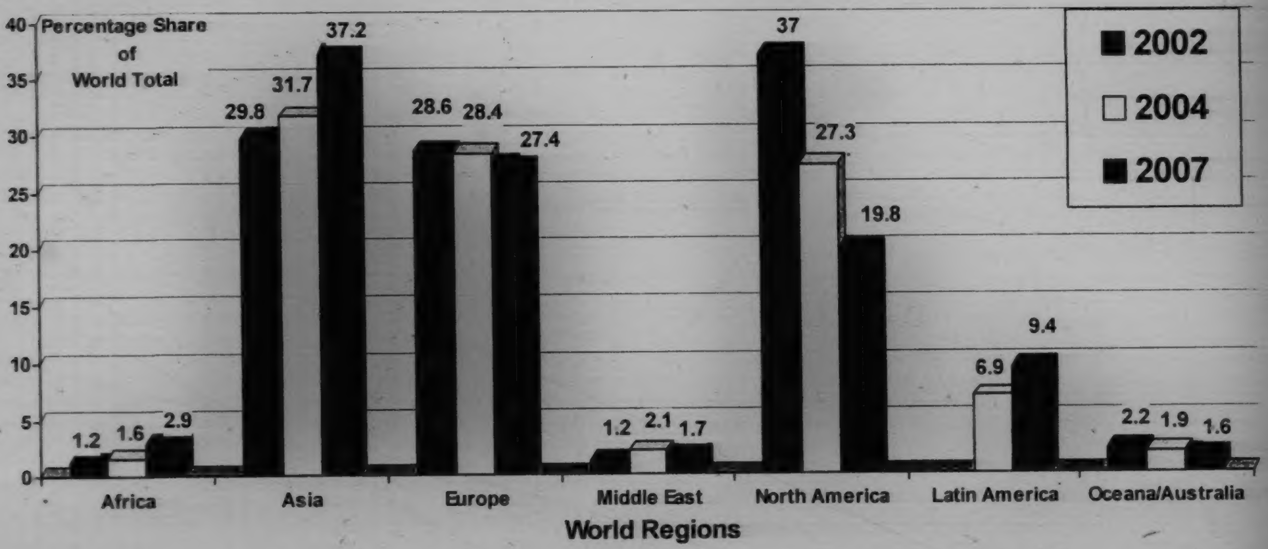
Sign an online partition.
Meet online with people from other cultures and discuss relevant issues that deal with the local, national and global communities.
Access online news media of other countries.
Read and contribute to political websites or blogs.
Send an email to someone in another country.
Create a blog, podcast or wiki expressing thoughts on local, national and global issues (e.g., social justice, peace, environment).
Donate to a cause online (e.g., hunger, aids, environment).
Post a video on the Internet sharing your unique vision of a better world.
Attend a virutal summit/presentation on local, national or global issues.
Other (please specify)

Other Comments
16. Any other comments:

Note: *Elements of the questions for the digital literacy section of this survey were adapted from the Organization for Economic Development and Cooperation study (OECD, 2005, p. 43). While elements for the Attributes of (Inter)Cultural Competency – self rating scale- were adapted from the Federation of The Experiment in International Living, Assessing Intercultural Competence survey questionnaire (FEIL, 2005, p. 7).*

APPENDIX C
GLOBAL INTERNET USER POPULATION DYNAMICS

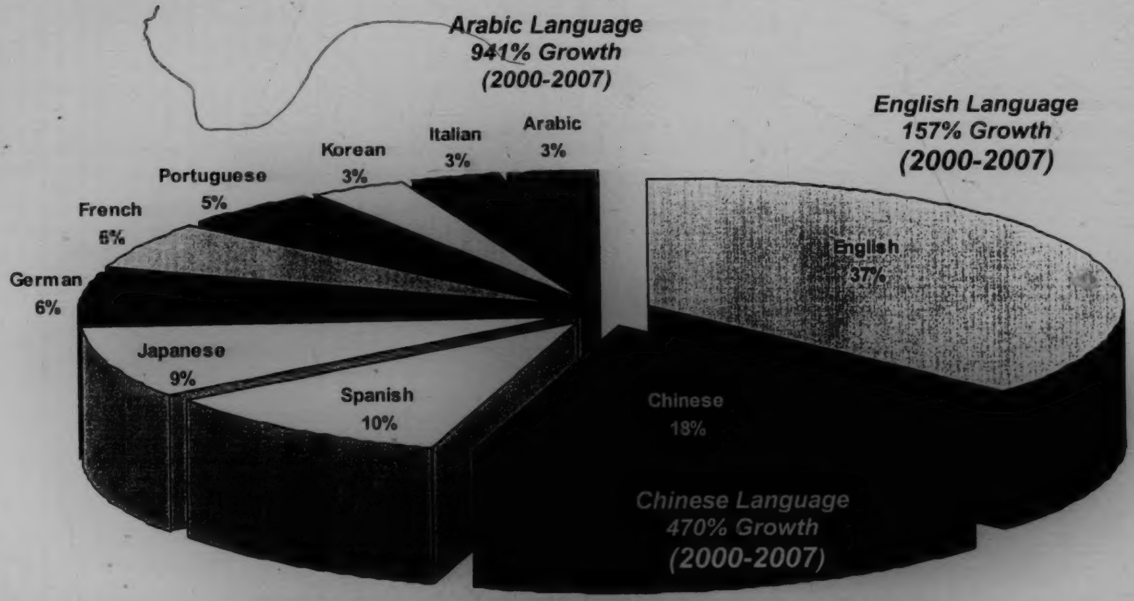
Percentage Share of Global Internet Utilization by World Region 2002-2007



Percentage Share of Global Internet Utilization by World Region 2002-2007

Data Source: Compiled from data published by Internet World Statistics (2007a) between the years 2002-2007.

APPENDIX D
TOP 10 GLOBAL LANGUAGES ON THE INTERNET



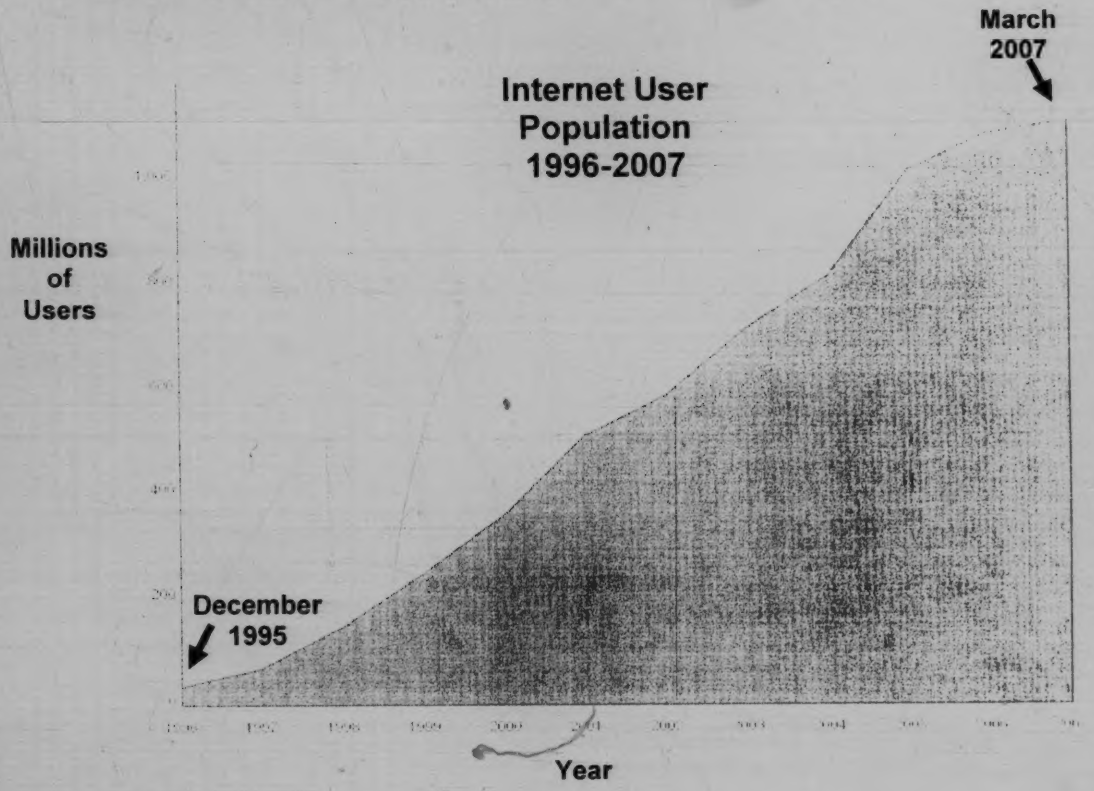
Percentage Share of the Top Ten Global Languages on the Internet as of June 30, 2007

Data Source: Compiled from data published by Internet World Statistics (2007c).

APPENDIX E

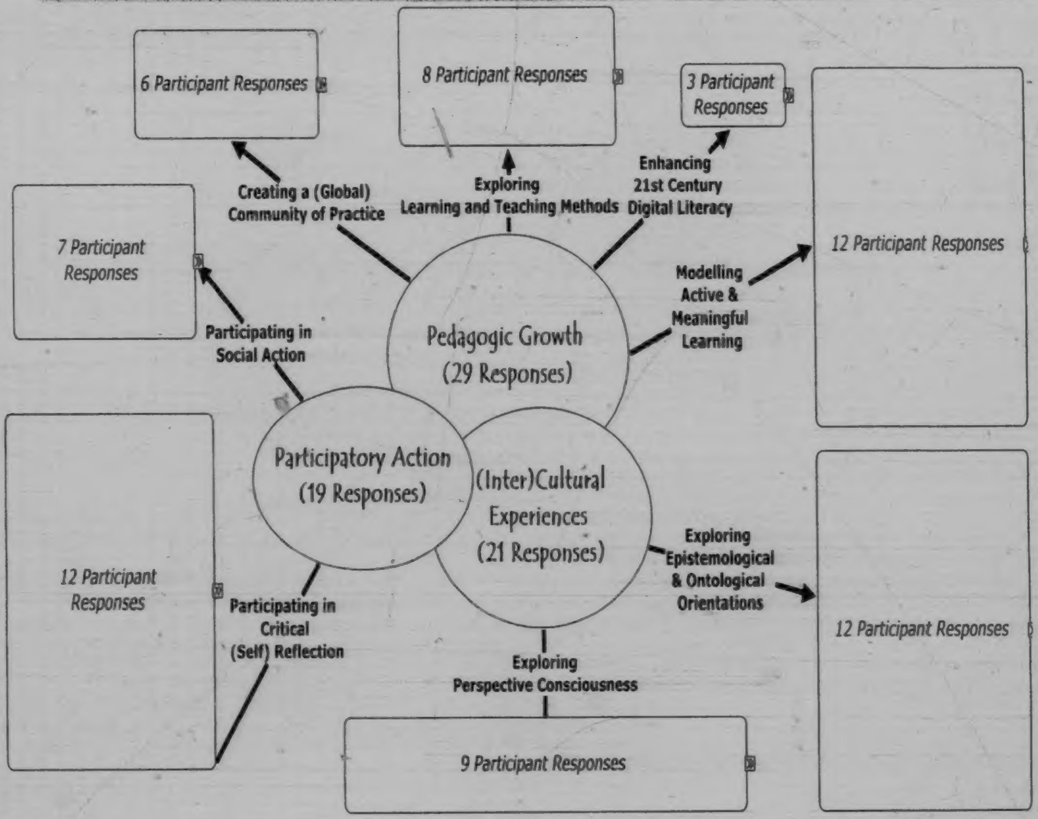
INTERNET POPULATION GROWTH 1996-2007

Compiled from data published on Internet World Statistics (2007).



APPENDIX F
FOCUS GROUP DATA VISUALIZATION
Created by Philip McRae, 2007

Focus Group Question: If part of your social studies coursework in the undergraduate program involved communicating and collaborating, via the Internet, with people from other cultures, what benefits do you think you would derive from this experience?


6 Participant Responses
8 Participant Responses
3 Participant Responses
7 Participant Responses
12 Participant Responses
Creating a (Global) Community of Practice
Exploring Learning and Teaching Methods
Enhancing 21st Century Digital Literacy
Modelling Active & Meaningful Learning
Participating in Social Action
Pedagogic Growth (29 Responses)
Participatory Action (19 Responses)
(Inter)Cultural Experiences (21 Responses)
12 Participant Responses
Participating in Critical (Self) Reflection
Exploring Epistemological & Ontological Orientations
12 Participant Responses
Exploring Perspective Consciousness
9 Participant Responses

APPENDIX G
FOCUS GROUP PARTICIPANTS DEFINITIONS OF GLOBAL CITIZENSHIP

Participant 1
"First of all I believe it is the responsibility of people to be informed (at least somewhat) of global issues. So many people make judgements or criticize without fully or even attempting to understand the issue. I have been guilty of this and I am surrounded by people that are guilty of this. But just being informed isnt enough to be an "active" citizen. You have to realize what types of things you can do to participate or help in the world. These are things I wish were offered in the curriculum. I would love to have a better idea of what kinds of things I can do to make the world a better place."

Participant 2
"I think that a globalized citizen is a created notion to keep certain sections of society in power. That is to say, that we want globalized citizens who are weaker, less fortunate, and in dire situations. These sections in power do this to not only keep themseleves in power, but to also show their own communites that there are others, less fortunate, and weaker they us. This sense of a globalized citizen is rather created to keep thier eyes on problems that are happening in far off places, rather then the ones that are going on in their neighbourhood. It is a great idea of empower students to understand that their actions will have global effects, but i believe we need to have something more."

Participant 3
"While the concept of a 'global citizen' is contentious given that there is a limited amount of global governance, electronic technologies greatly increase the communication across cultural and geographical boundaries. That aside, a global citizen needs to know what is legitimately a representation of another culture by using the human capacity of reason to analyse and judge the information they receive; thus, taking action, empathizing and changing one's own culture(s) through this sort of education. I firmly beleive that global education and citizenship (in a democratic light) reserves the right to judge and rank and not accept all perspectives as equal as we increasingly engage in these electronic discourses."

Participant 4
"i think that to be an active global citizen students need to have the resources and the skills to locate information that will actively engage them in expanding their worldviews. Once students have a better understanding of where they fit into the world and some of the global issues, the idea of being active will evolve, they will search information on their own as well as look for different courses of action that could be taken to improve their futures."

Participant 5
"Being a global citizen means to be aware of the world around you, aware that your actions affect not only you and your community but may be as far reaching as the the entire world. Global citizenship means to have an active interest in the world around you and be willing to inquire as to the happenings in that world. One must have the openmindedness to see that their perspective is not the only one and to be willing to listen to any and all perspectives which one may encounter. A global citizen must also have a concern for thier world and the people in it, whethter they be next door or around the world. One must be concerned also about the future of the world and its people. One must also be willing to seek information about places in the world both close to home and far away, and be willing to speak up and take action when and where they can to rectify injustices that they see occuring."

Participant 6
"I think a global citizen is someone who is an active, thoughtful member who assists in the beneficial contribution to their respective local, national, and global communities.

Participant 7
"A Global Citizen should be a critical thinker who can examine issues from multiple perspectives, and be open to ideas from those perspectives. They should be able to examine their own biases, as well as recognise the biases of others, as well as in the media. The global citizen should be able to analyse information, and make well thought out decisions based on good information. The Global Citizen also needs to recognize that there are issues that are larger than themselves, and their country, and that sometimes decisions need to be made in the best interests of the global community, rather than protecting their own self interests, which requires empathy, and for thought."

Participant 8
"the term citizen seems to other people (in short). A 'global citizen seems to be a paradox. Because, on one hand it includes everyone, but does it really? Could global citizenship be the result of a ideological disease that spreads across the world killing off other cultures (much like the europeans colonies then american corporations)? Althought the intentions may seem admirable and romantic, could the means (the pc) to create a global citizenship be a technological pirate?"

Participant 9
"In order to be a global citizen you have to understand who you are and what your place is in the world, and then use that to compare yourself with other people, cultures etc. Citizenship implies a community, so in order to be a part of a community you have understand how it operates and where you fit within it. This means more than just knowing where things are and who does what, if you actively engage with other people and cultures through the use of technology you are more apt to construct your own notion of global citizenship."

Participant 10

"An active global citizen is an individual who stives to be informed about global issues and acts in responsible ways to participate in worldly affairs. TO be a global citizen means that you are globally aware regarding issues, people, cultures, etc. Global citizens are able to connect their local actions to the multiple global implications."

Participant 11

"Global citizens have the ability to critically analyze issues and see issues from multiple perspectives and understand and accept opposing well reasoned issues."

Participant 12

"An individual who is defined as a global citizen perhaps implies that he or she is accountable to the world at large; we all indirectly and directly influence the manner in which the world progresses and digresses."

Participant 13

"A global citizen is one who is connected and aware to the issues, events and perspectives outside of one's own immediate environment. An active global citizen can be defined as: active, curious, understanding, driven, and knowledgable."

Participant 14

"Global citizenship entails being aware of ones actions and interactions and their corresponding affects and effects on their personal environment, culture, politics, economics, and spirituality....as well as their impacts globally and how they can choose to make decisions that can have far reaching positive changes and supports to an individual or to a cause or action that helps all parties involved reaching a helathier lifestyle emotionally, physically, mentally, spirituyally and socially."

Participant 15

"I believe that being a global citizen means that one has either a knowledge of other cultures and other perspectives, or the ability to do so. I think the ability to find information about anything has become the most important skill to become a global citizen. However, finding the information is not enough. As teachers, I feel that we must also give students the skills to critically analyze the information that they find. Teaching specific knowledge and attitudes are quickly becoming a thing of the past; teaching the skills required tofind knowledge and form one's own attitude is now what is important."